HCD-A195/D250/G2000

SERVICE MANUAL

US Model
HCD-D250/G2000
Canadian Model
HCD-A195

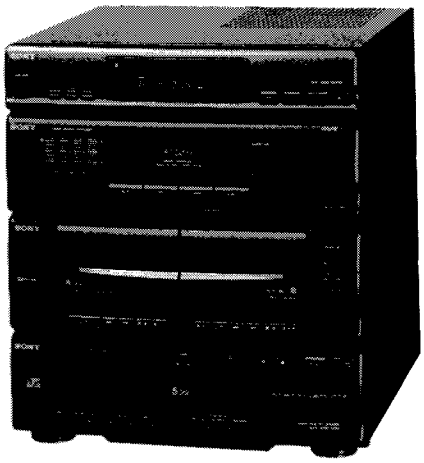


Photo: HCD-G2000

HCD-A195, HCD-D250 and HCD-G2000 are the tuner, deck, CD and amplifier section in LBT-A195, LBT-D250 and LBT-G2000 respectively.

CD Section	Model Name Using Similar Mechanism	CDP-411/511/D7
	CD Mechanism Name	CDM14-5BD13
	Base Unit Name	BU-5BD13
DECK Section	Model Name Using Similar Mechanism	HTC-D159
	Tape Transport Mechanism Type	TCM-180VW-H11

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION :
With 6-ohm loads, both channels driven, from 70—15,000Hz ; rated 10 watts per channel minimum RMS power, with less than 10% total harmonic distortion from 250 milliwatts to rated output.

Amplifier

Continuous RMS power output
10W+10W (6 ohms, at 1kHz, 5% THD)

Input	Jack type	Sensitivity	Impedance
VIDEO (G2000)	Phono	300 mV	47 kilohms
PHONO (A195/D250)	Phono	3 mV	47 kilohms

Output	Jack type	Impedance
HEADPHONES	Stereophone	Accepts headphones of 8 ohms or more

Frequency response 15Hz to 50kHz $^{+9}_{-3}$ dB

Tuner

System	FM stereo FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 to 108MHz
Antenna	300 ohms balanced 75 ohms unbalanced
Intermediate frequency	10.7MHz
AM tuner section	
Tuning range	AM : 530 to 1,710kHz
Antenna	AM loop antenna External antenna terminal
Intermediate frequency	450kHz

Cassette deck

Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF With Type II cassette (Sony UX-S) 40Hz to 14kHz (±3dB) With Type I cassette (Sony HF-S) 40Hz to 13kHz (±3dB)
Wow and flutter	W. PEAK±0.2% (DIN) (A195) 0.1% (WRMS) (D250/G2000)

—continued on next page—

COMPACT DISC DECK RECEIVER

SONY®

MICROFILM

Compact disc player

Laser	Semiconductor laser
Wavelength	780—790nm
Frequency response	2Hz to 20kHz±1dB
Signal-to-noise ratio	More than 93dB
Dynamic range	More than 90dB
Harmonic distortion	Less than 0.01% (1kHz)
Channel separation	More than 90dB (1kHz)

General

Power requirements	120V AC, 60Hz
Power consumption	45W
Mass	Approx. 9.9kg (20 lb 14 oz)
Dimensions	Approx. 355×395×405mm ($14\times15^{5}/_{8}\times16$ inches) (w/h/d, including projections)

Supplied accessories

Remote commander RM-S221	(1)
Batteries Sony SUM-3 (NS)	(2)
FM wire antenna	(1)
AM loop antenna	(1)

Design and specifications are subject to change without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

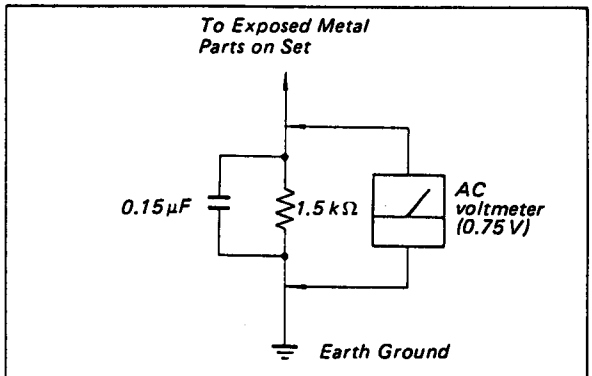


Fig. A. Using an AC voltmeter to check AC leakage.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

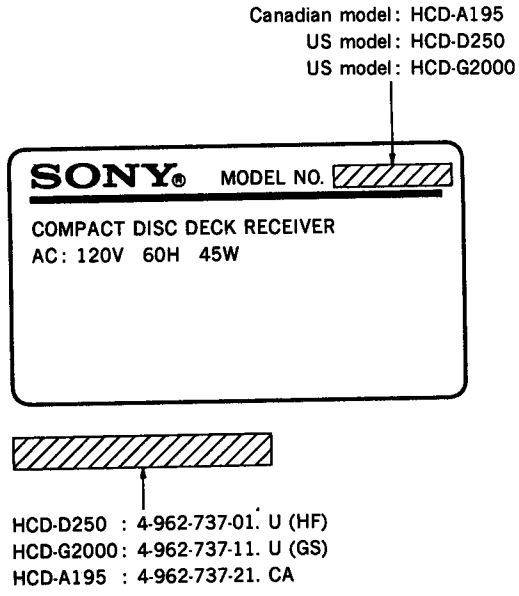
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

MODEL IDENTIFICATION

—Label Model Number—



HCD-D250 : 4-962-737-01. U (HF)
HCD-G2000: 4-962-737-11. U (GS)
HCD-A195 : 4-962-737-21. CA

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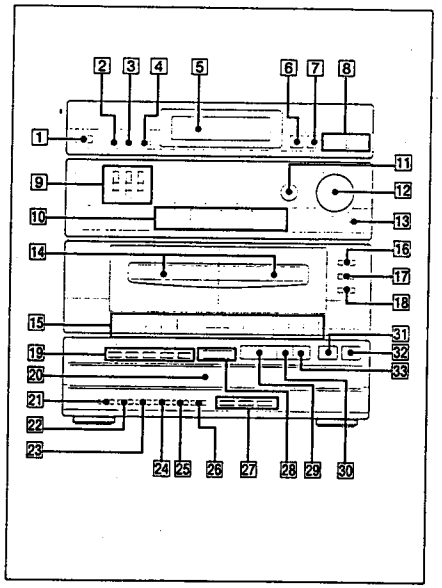
Location of Controls

Refer to the pages indicated in parentheses for details.



Compact Disc Deck Receiver

Tuner section

1 POWER switch
2 MEMORY button
3 STEREO/MONO button
4 TUNING/PRESET button
5 Display window
6 BAND button
7 SHIFT button
8 DUAL MODE TUNING +/– buttons

Amplifier section

9 3 BAND GRAPHIC EQUALIZER controls (A195/G2000)
TONE CONTROLs (D250)
10 Function selectors and indicators
11 SURROUND control
12 VOLUME control
13 HEADPHONES jack

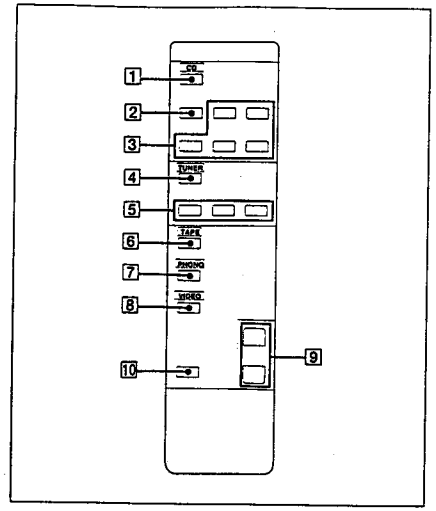
Cassette deck section

14 Cassette holders
15 Tape operating buttons
► (play) button, ■ / ⏏ (stop/eject) button, ►► (rightward fast winding) button, ◄◄ (leftward fast winding) button,
II PAUSE button , ● REC button (only for deck B)
16 DOLBY NR (Noise Reduction) (ON/OFF) switch
17 TAPE SELECT (TYPE I/TYPE II) button
18 DUBBING SPEED (HIGH/NORMAL) button (A195/G2000)

Compact disc player section

19 DISC SELECT 1-5 button
20 Disc tray
21 TIME button
22 REPEAT button
23 MUSIC SCAN button
24 CHECK (program check) button
25 CLEAR (program clear) button
26 EDIT button
27 PLAY MODE buttons
CONTINUE button
SHUFFLE button
PROGRAM button
28 ⏮ ◄◄ / ►► ⏭ AMS* buttons
29 ► (play) button and indicator
30 II (pause) button and indicator
31 DISC SKIP button
32 ⏏ OPEN/CLOSE button
33 ■ (stop) button

* AMS is the abbreviation of Automatic Music Sensor.



Remote commander RM-S221

1 CD function button
2 DISC SKIP button
3 CD operation buttons
⏮ / ⏭ (AMS*) buttons, ► (play) button, II PAUSE button , ■ (stop) button
4 TUNER function button
5 Tuner operation buttons
SHIFT button
PRESET +/– butons
These buttons are used to select the preset station number.
6 TAPE function button
7 PHONO function button (operative with A195/D250)
8 VIDEO function button (operative with G2000)
9 VOL (volume) +/– buttons
10 This button is inoperative with this unit.

* AMS is the abbreviation of Automatic Music Sensor.

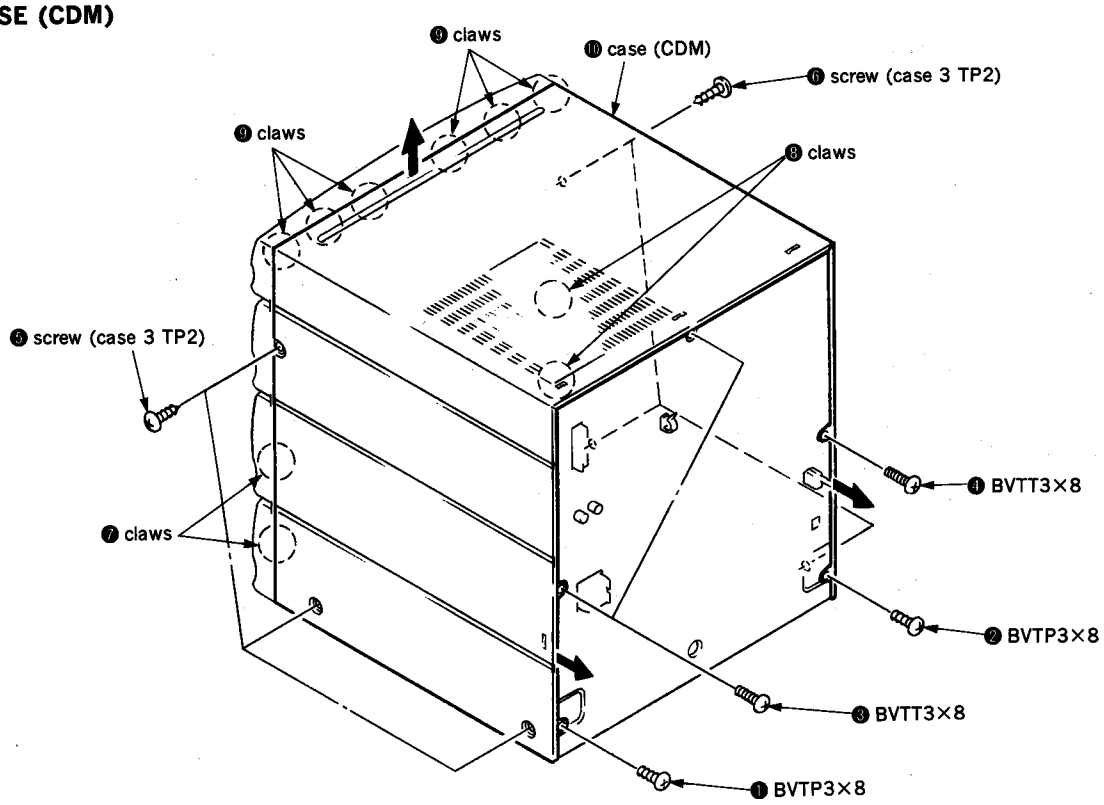
SECTION 1
GENERAL

This section is extracted from instruction manual.

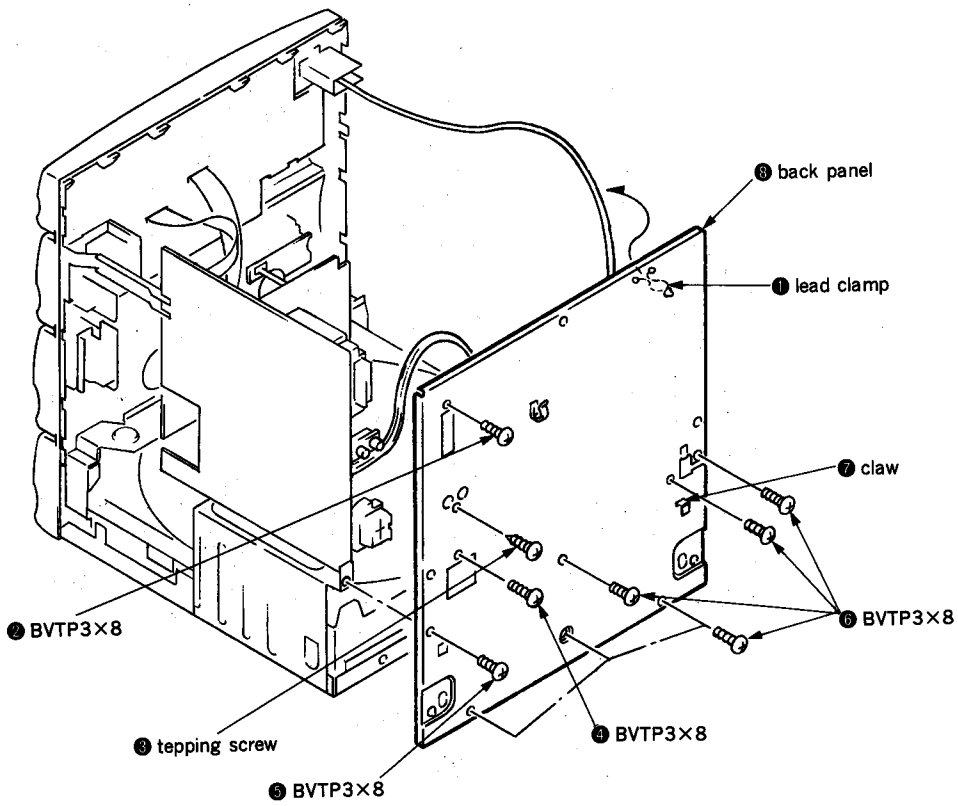
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

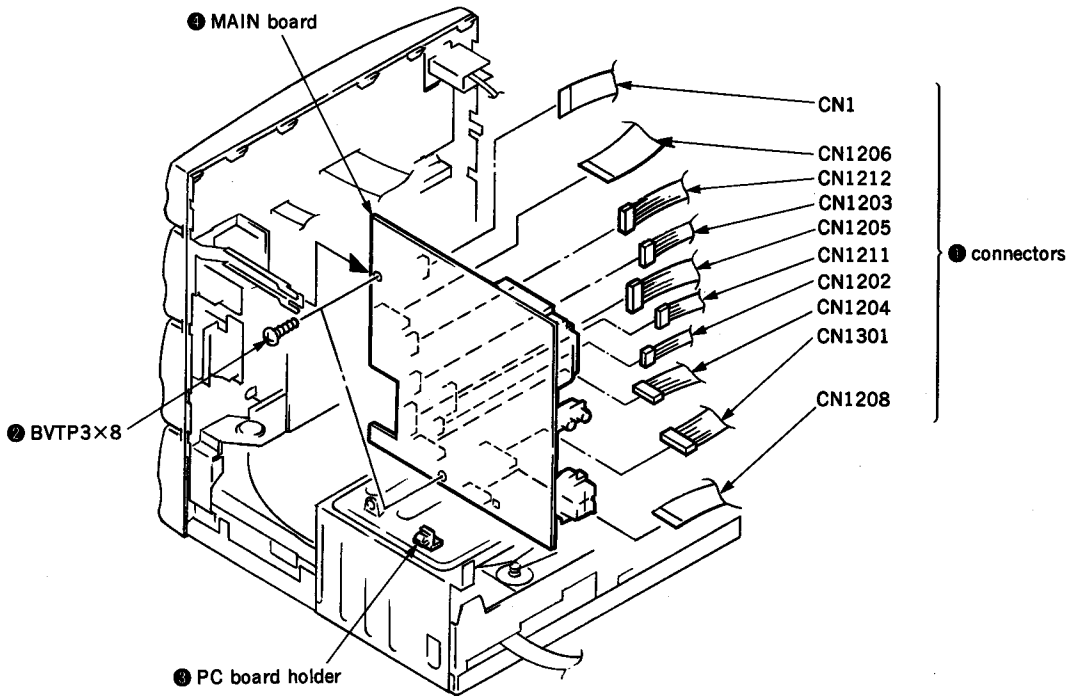
2-1. CASE (CDM)



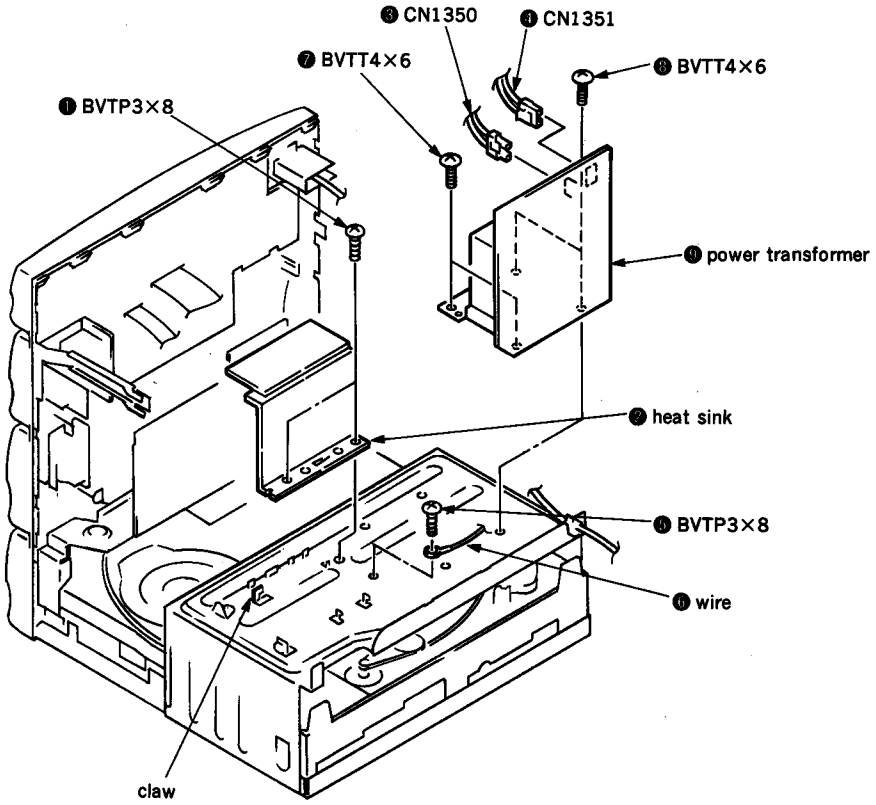
2-2. BACK PANEL



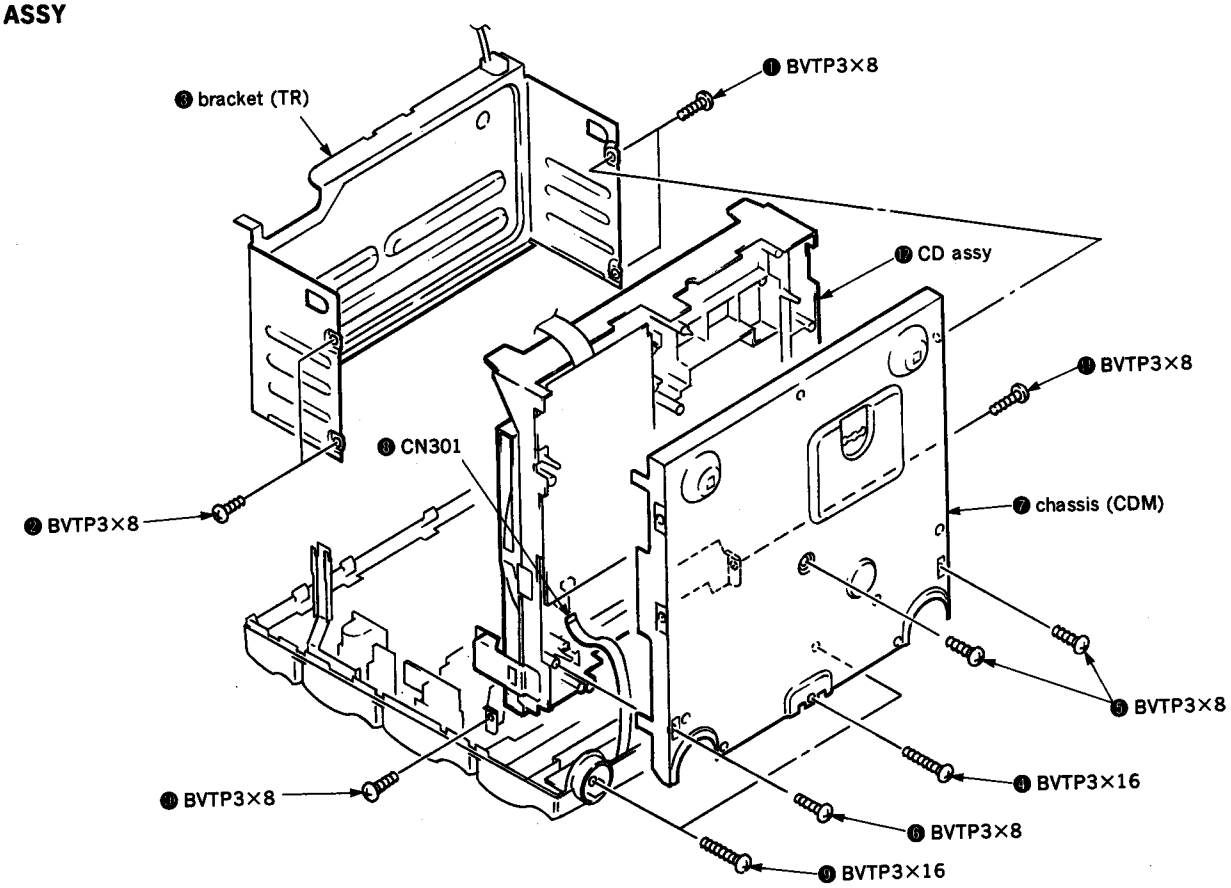
2-3. MAIN BOARD



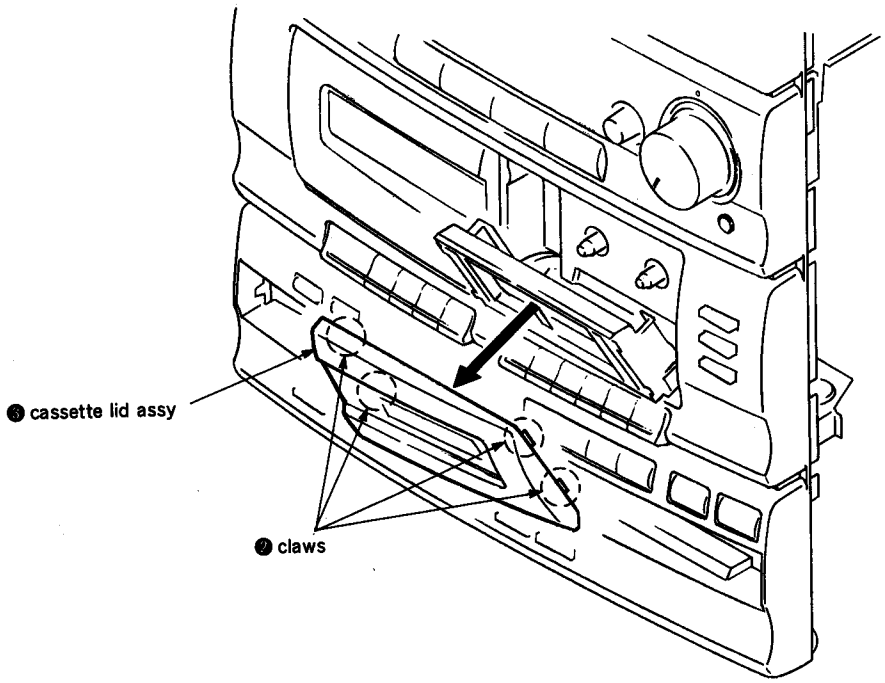
2-4. POWER TRANSFORMER



2-5. CD ASSY

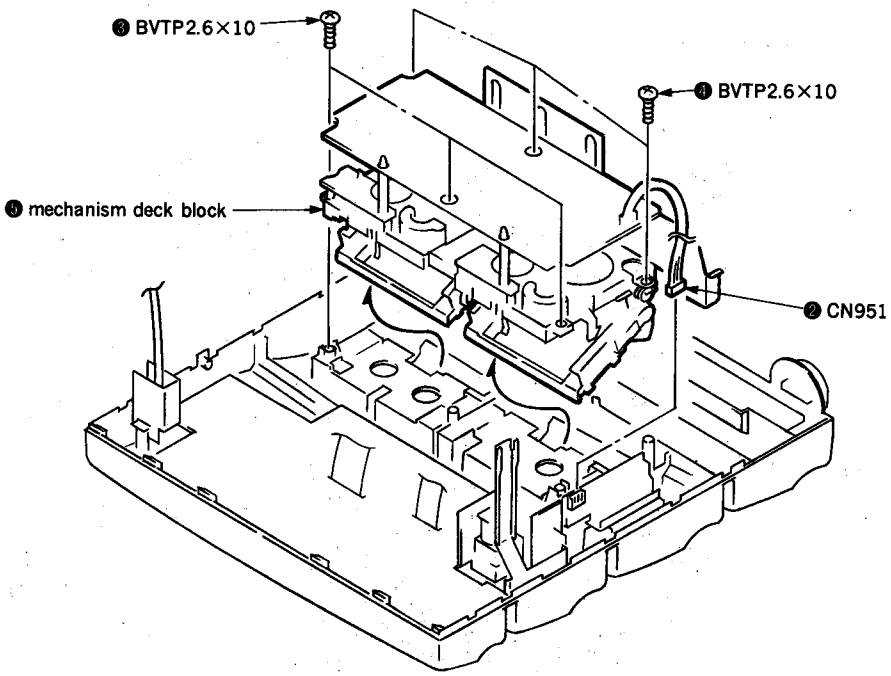


2-6. CASSETTE LID ASSY

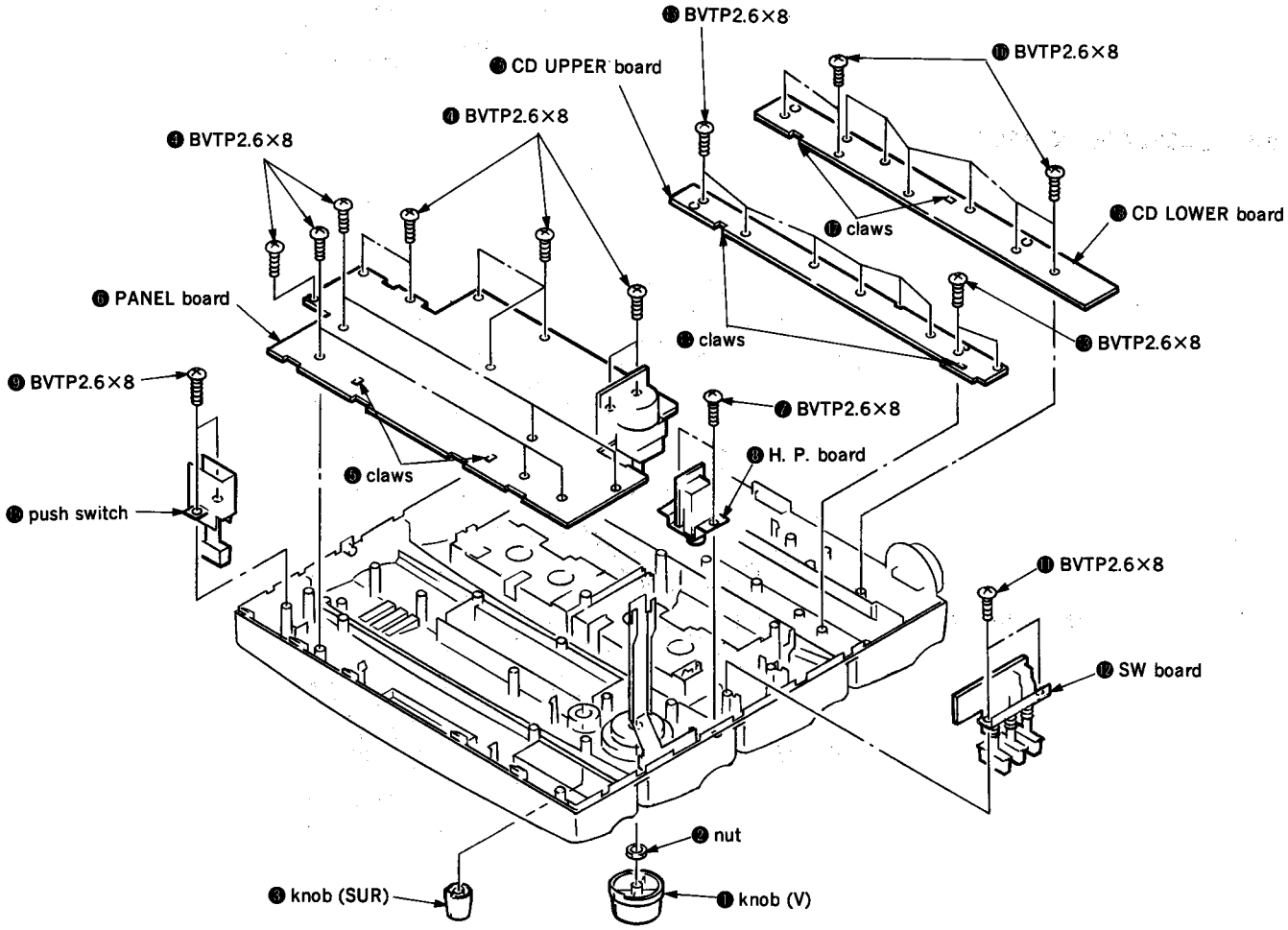


2-7. MECHANISM DECK BLOCK

❶ Push the EJECT button.

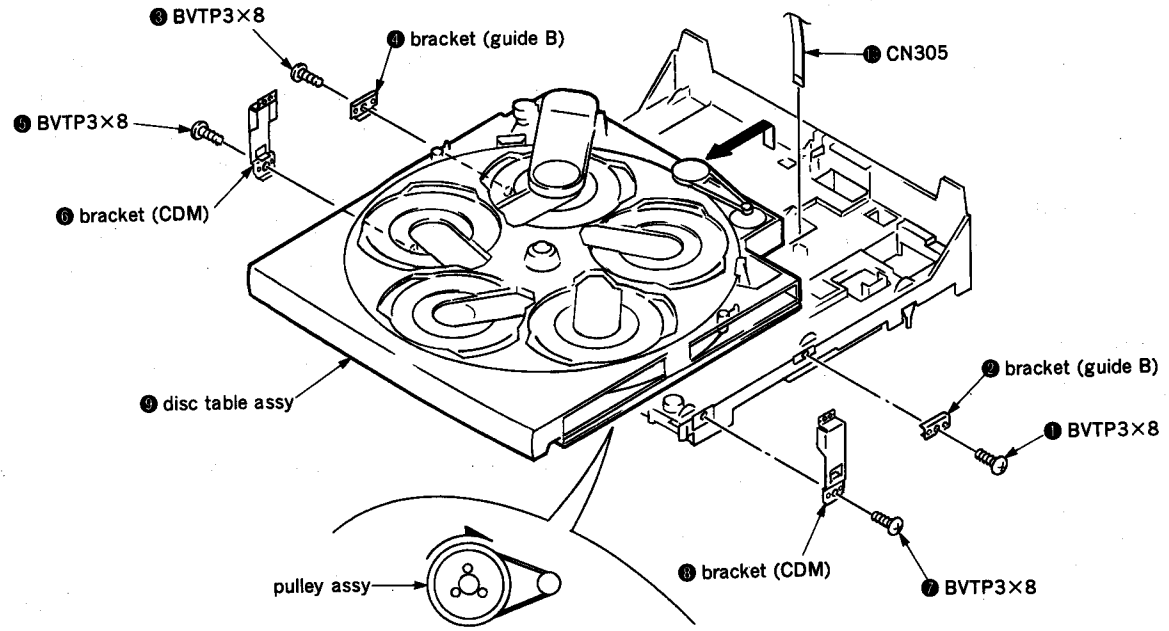


2-8. PANEL BOARD



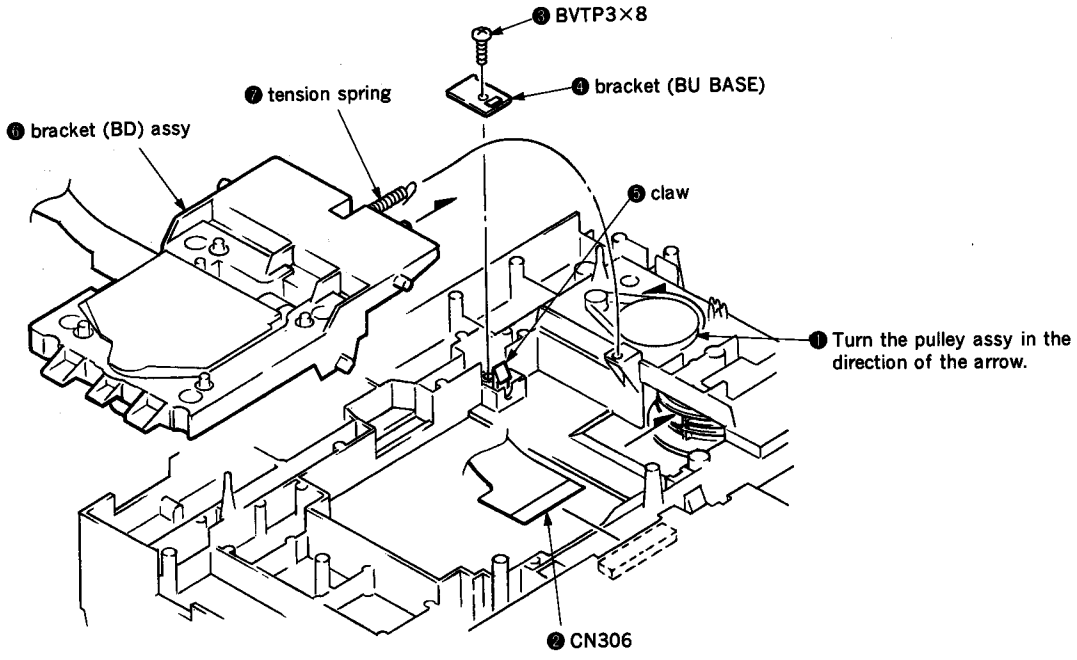
2-9. DISC TABLE ASSY

Note on assembly : Turn the pulley assy in the direction of the arrow.
Down the bracket (BD) assy, and assembly the disc table assy.



2-10. BRACKET (BD) ASSY

Note on assembly : Set to the arrow portion of gear (loading A) for shaft (CAM).


❸ BVTP3×8
❹ bracket (BU BASE)
❼ tension spring
❻ bracket (BD) assy
❺ claw
❶ Turn the pulley assy in the direction of the arrow.
❷ CN306

SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:
   record/playback heads — pinch rollers
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	30−70g•cm (0.42−0.97oz•inch)
FWD Back tension	CQ-102C	1.5−5.5g•cm (0.020−0.076oz•inch)
FF/REW	CQ-201B	63g•cm or more (0.87oz•inch or more)

SECTION 4
ELECTRICAL ADJUSTMENTS

DECK SECTION **0dB=0.775V**

1. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
  TAPE SELECT switch: TYPE I
  DOLBY NR switch : OFF

Type	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment

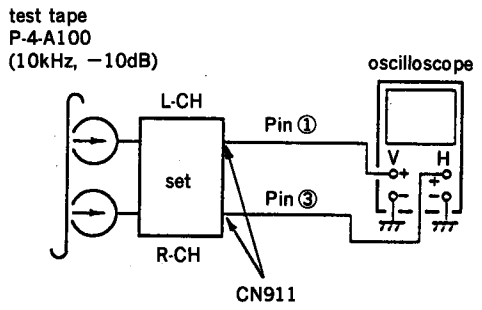
Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

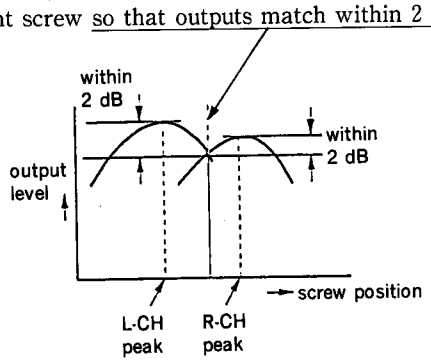
Note: Perform this adjustments for both decks.

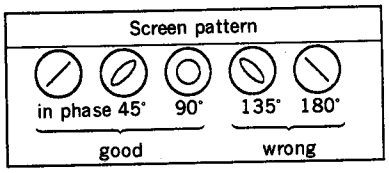
Procedure:

1. Mode: Playback



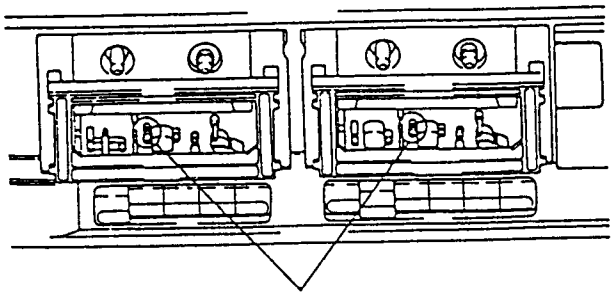
2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 2 dB of peak.





3. After the adjustments, apply suitable locking compound to the parts adjusted.

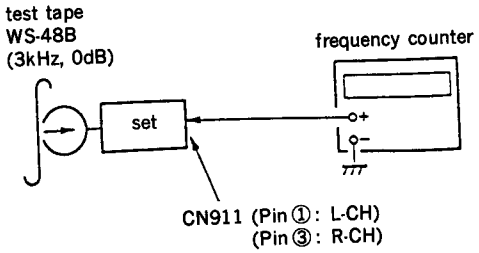
Adjustment Location :



Tape Speed Adjustment DECK A DECK B

Procedure :

Mode : Playback



High speed adjustment (HCD-A195/G2000 only) (Must be first Adjustment deck B)

1. Short pin CN912 on set "DUBBING SPEED" switch to "HIGH". Then at HIGH speed mode.
2. Adjust RV901 so that the frequency counter reads 6,000± 20Hz.

Normal speed adjustment

1. Remove the short pin from CN912 on set "DUBBING SPEED" switch to "NORMAL". Then at NORMAL speed mode.
2. Adjust RV902 so that the frequency counter reads 3,000± 10Hz.

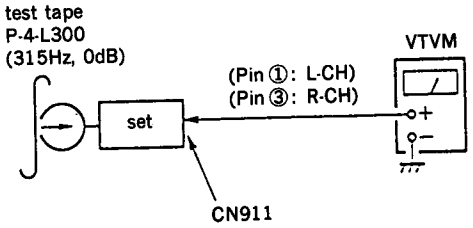
Frequency difference between deck A and deck B the beginning of the tape should be within ±1%.

Adjustment Location : main TC board

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : Playback



Deck A side RV701 (L-CH), RV801 (R-CH)
Deck B side RV702 (L-CH), RV802 (R-CH)
so that the limits below are satisfied.

Adjustable limits :

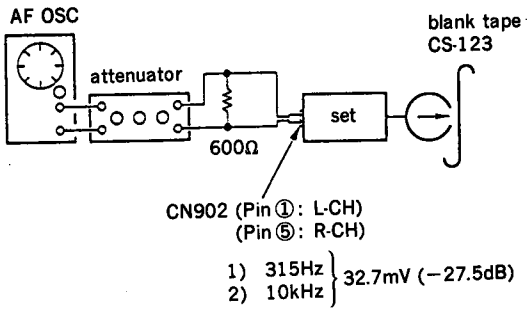
CN911 PB level : 366.7 to 411.4mV (−6.5 to −5.5dB)
level difference between the channels : within ±1dB

Adjustment Location : main TC board

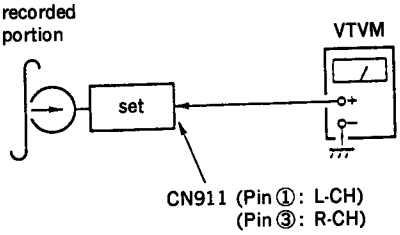
Record Bias Current Adjustment DECK B

Procedure :

1. Mode : record



2. Mode : Playback



Confirm playback the signal recorded in step 1 become adjustable limits as follows.
If these levels do not adjustable limits, adjustment the RV704 (L-CH) and RV804 (R-CH) to repeat step 1 and 2.

Adjustable limits : Playback output of 315Hz to playback output of 10kHz : 0±0.5dB

Adjustment Location : main TC board

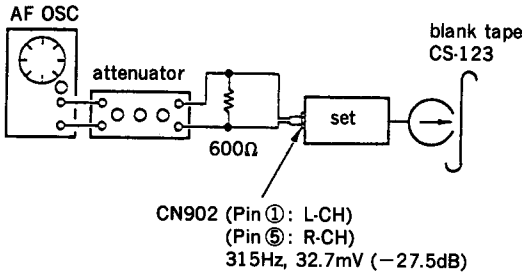
Record Level Adjustment DECK B

Setting :

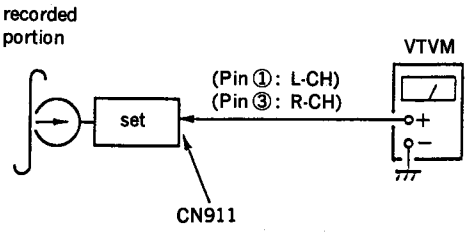
TAPE SELECT switch : TYPE I

Procedure :

1. Mode : record



2. Mode : playback



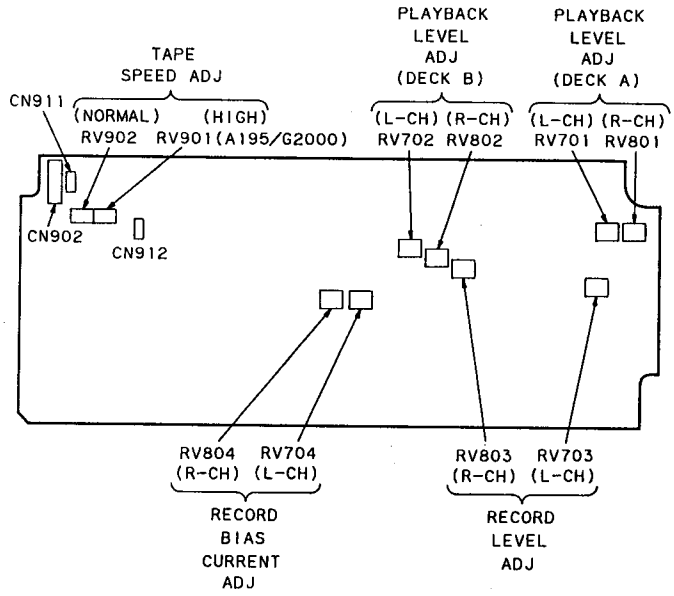
Confirm playback the signal recorded in step 1 become adjustable limits as follows.
If these levels do not adjustable limits, adjustment the RV703 (L-CH) and RV803 (R-CH) to repeat step 1 and 2.

Adjustable limits :

CN911 PB level : 30.9 to 34.6mV (−28 to −27dB)

Adjustment Location : main TC board

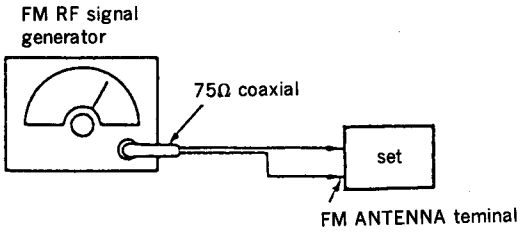
Adjustment Location : main TC board (component side)



TUNER SECTION | **0dB=1μV**

• FM SECTION

Setting :



Carrier frequency : 98MHz
Modulation : 1kHz, 75kHz deviation

FM Tuned Level Adjustment

Band : FM

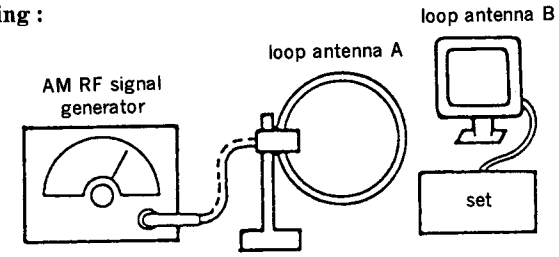
Procedure :

1. Supply a 17.8μV (25dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV2 so that the TUNED indicator goes on.

Adjustment Location : main board

• AM SECTION

Setting :



30% amplitude
modulation by 400Hz signal

AM Tuned Level Adjustment

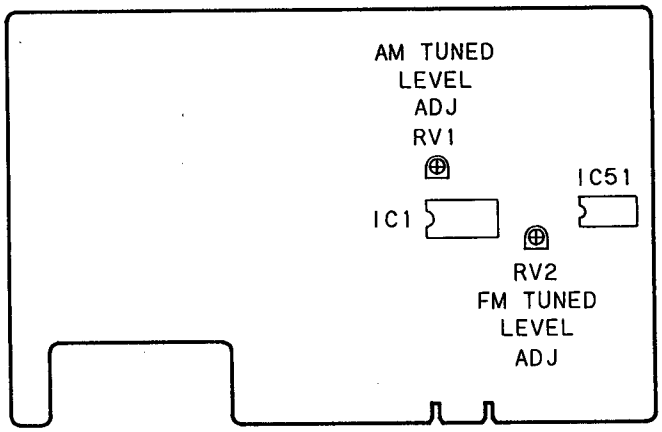
Band : AM

Procedure :

1. Set loop antenna A so that the loop antenna B input level becomes 0.56mV (55dBμ).
2. Tune the set to 1,050kHz.
3. Adjust RV1 so that the TUNED indicator goes on.

Adjustment Location : main board

Adjustment Location : main board (component side)

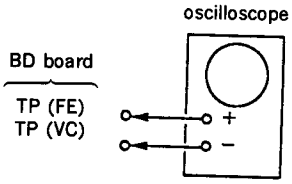


CD SECTION

Note:

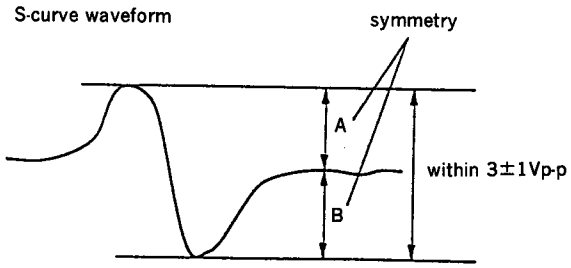
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an objective lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



Procedure:

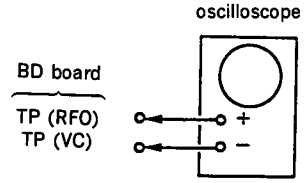
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in the turned Power switch on again and actuate the focus search. (Actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.



6. After check, remove the lead wire connected in step 2.

Note:
- Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

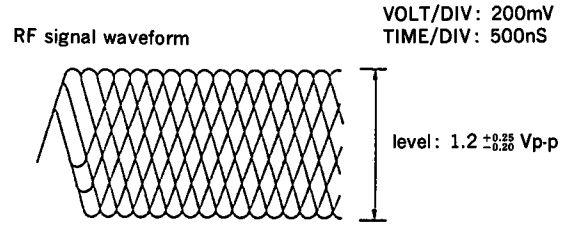
RF Level Check



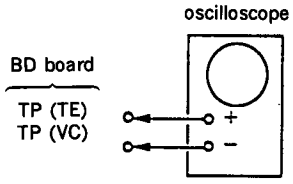
Procedure:

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

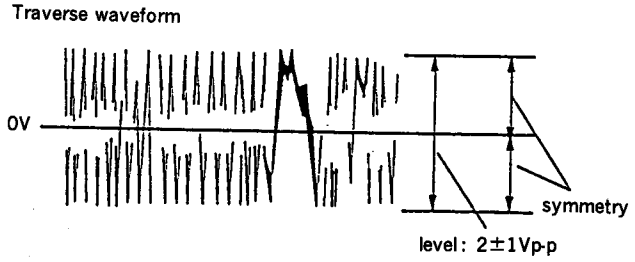


E-F Balance Check



Procedure:

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) is and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

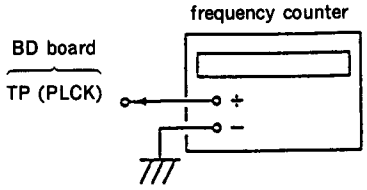


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.

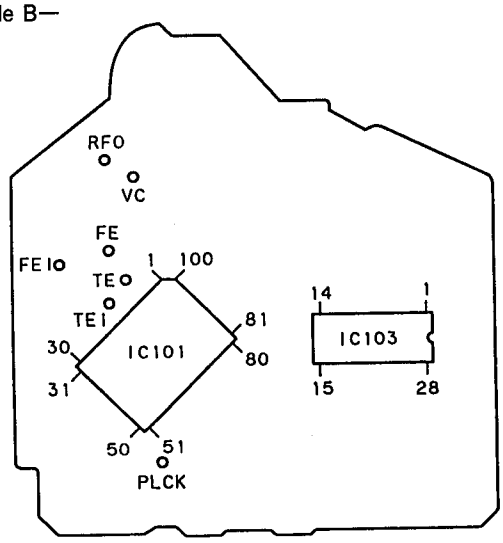


2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

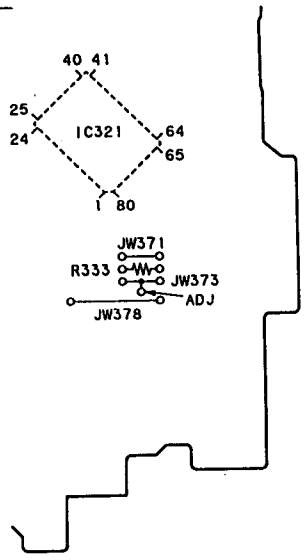
[BD BOARD]

—Side B—



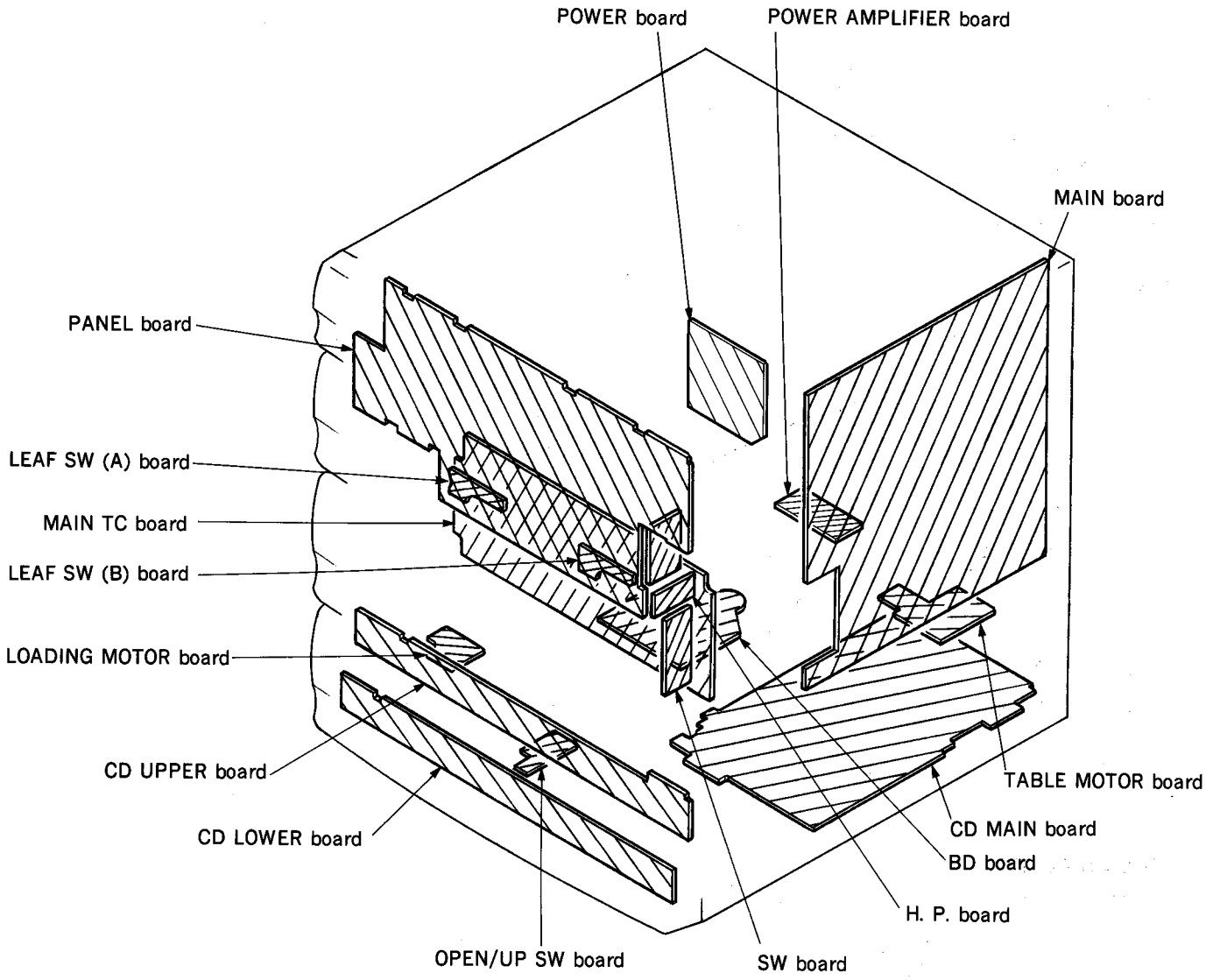
[CD MAIN BOARD]

—Component side—

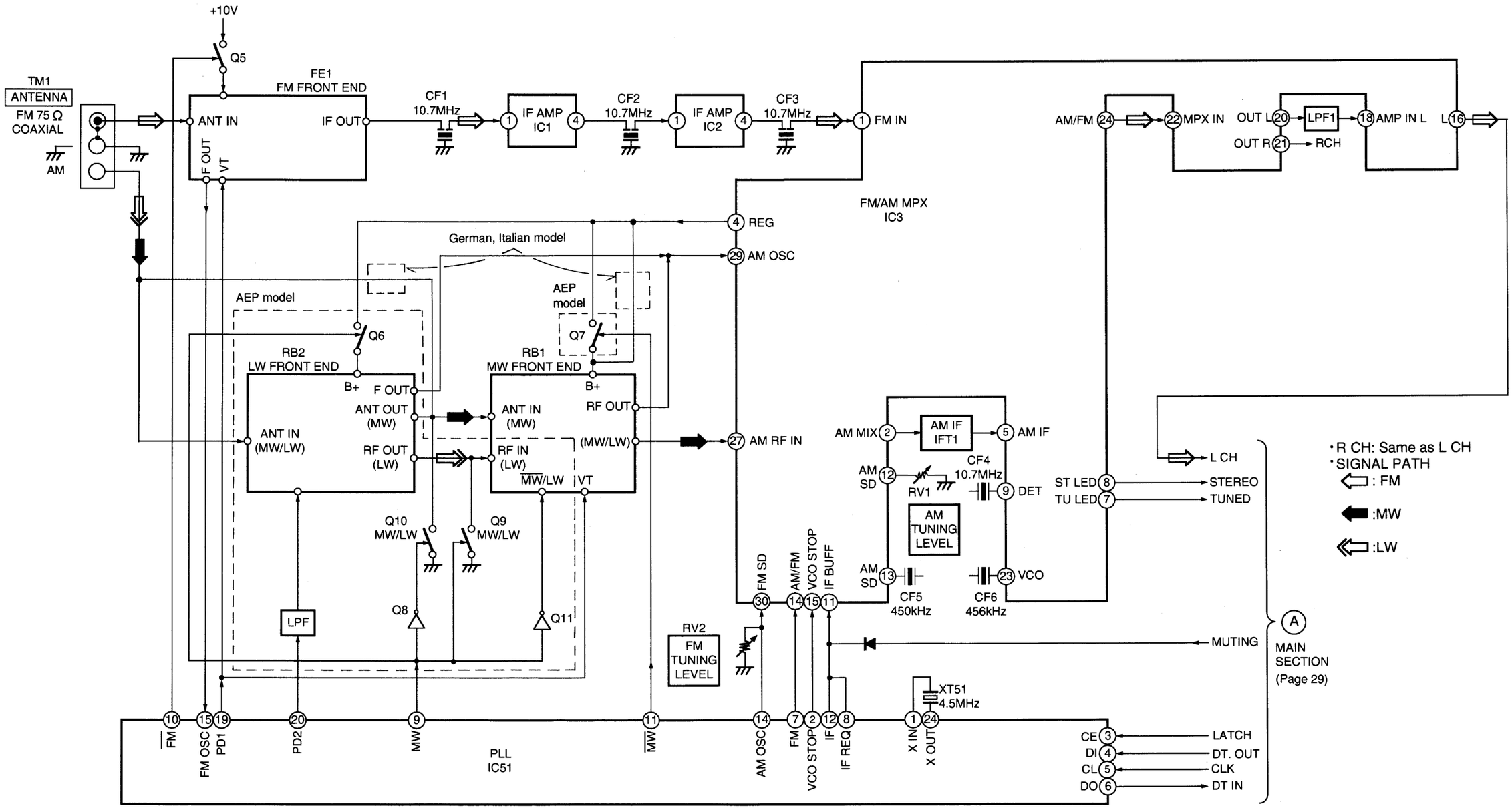


SECTION 5
DIAGRAM

5-1. CIRCUIT BOARDS LOCATION

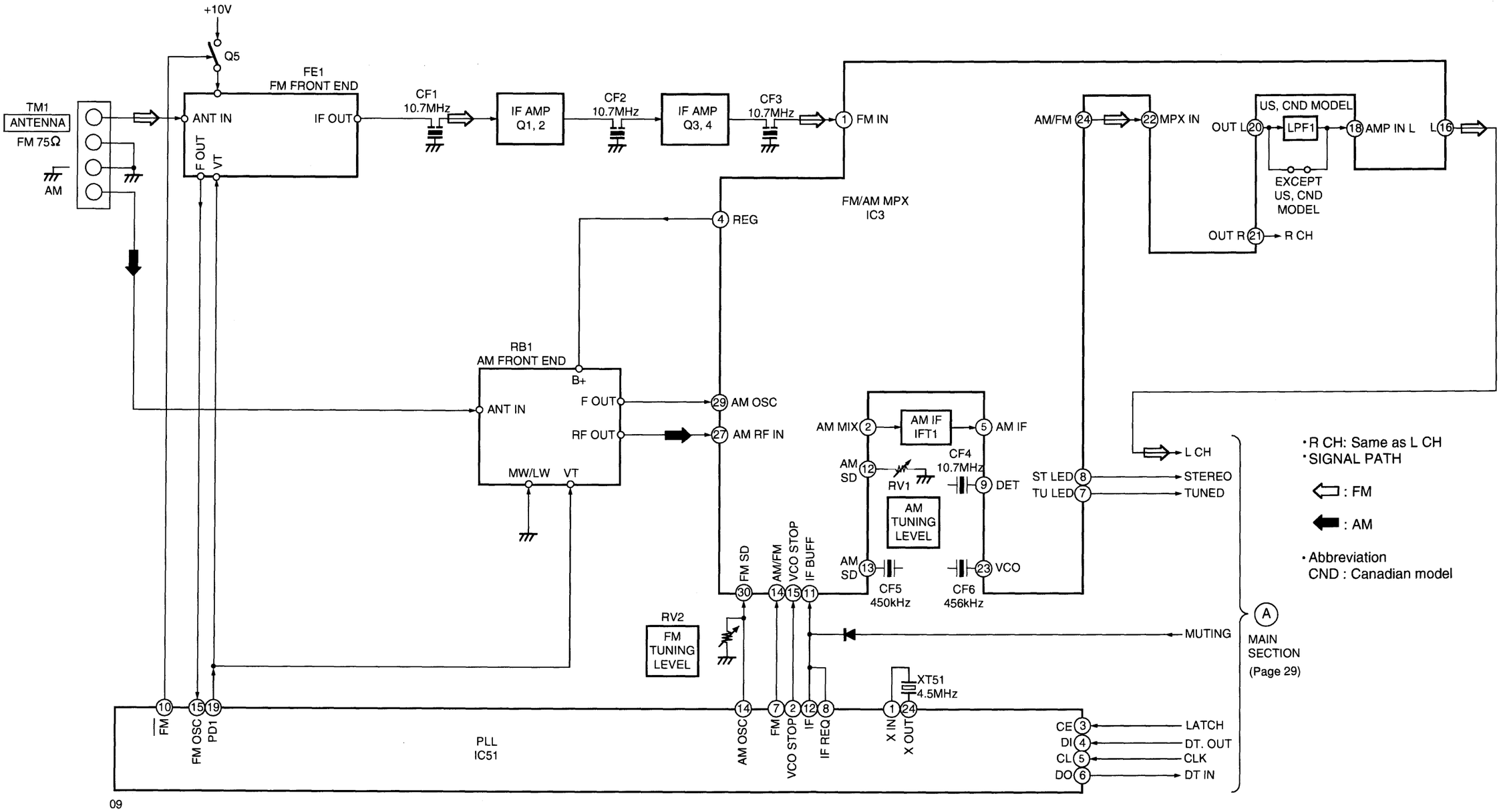


6-3. BLOCK DIAGRAM
— TUNER SECTION (AEP, German, Italian model) —



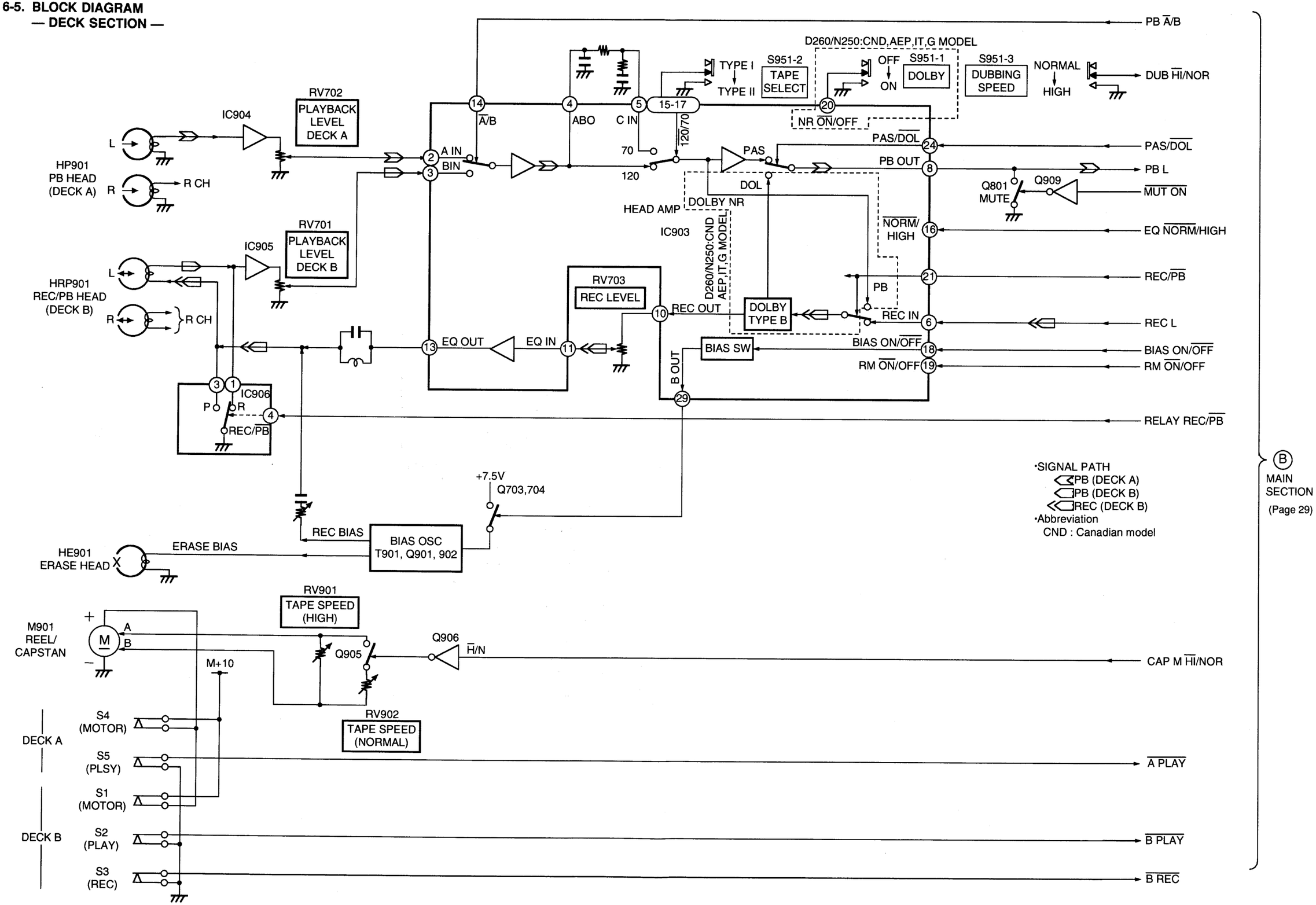
09

6-4. BLOCK DIAGRAM
— TUNER SECTION (EXCEPT AEP, German, Italian model) —

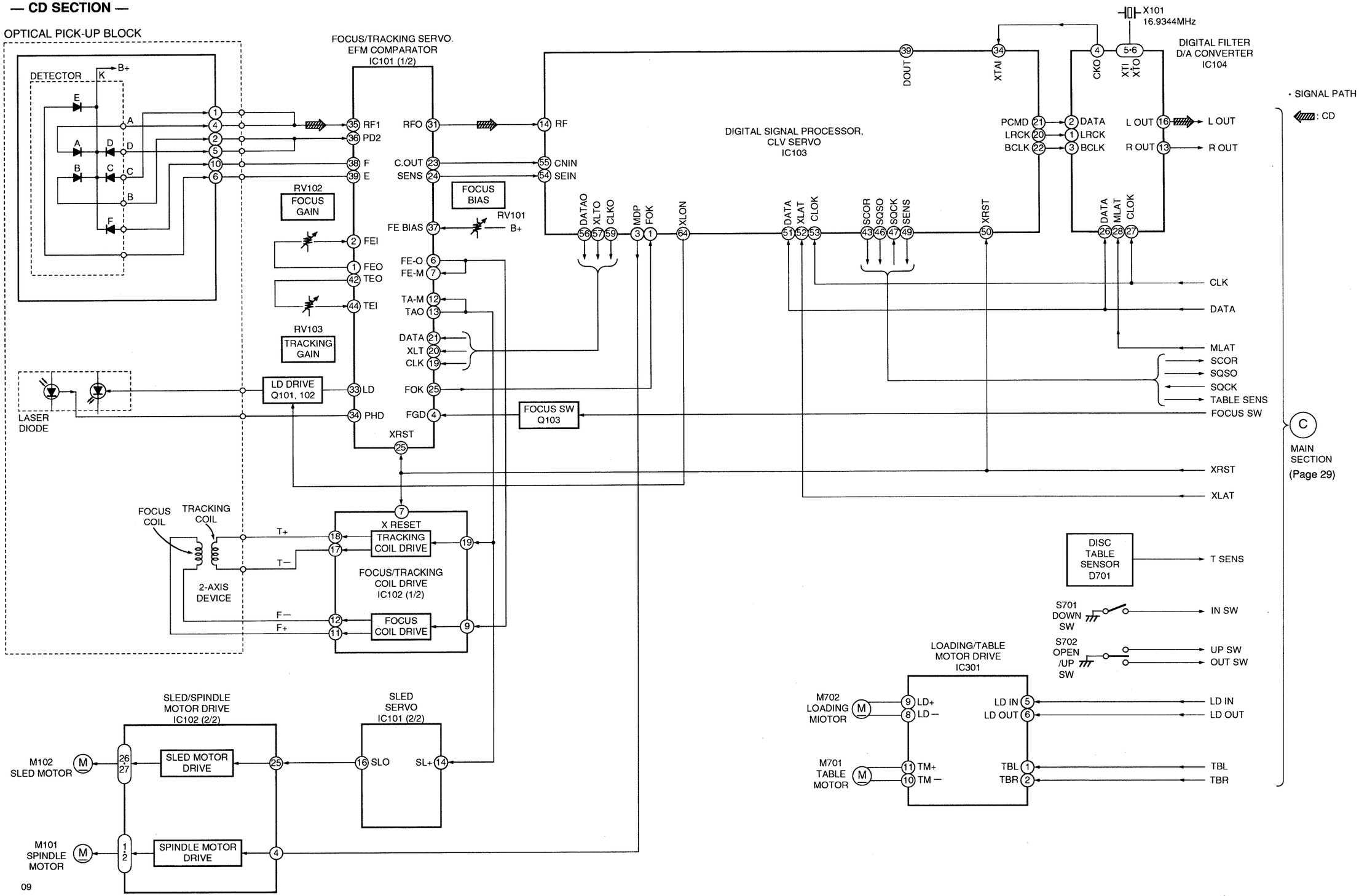


09

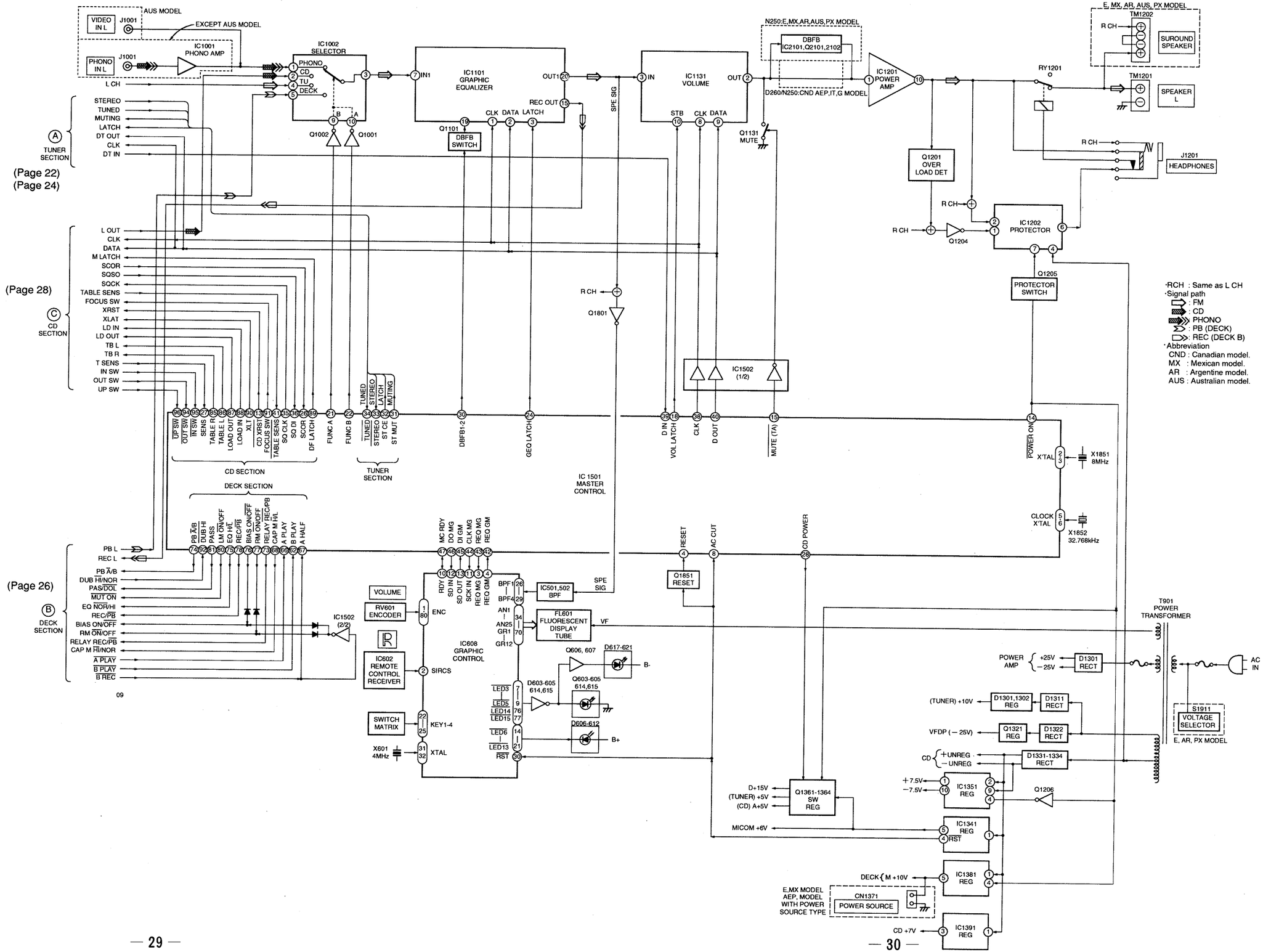
6-5. BLOCK DIAGRAM — DECK SECTION —



6-6. BLOCK DIAGRAM
— CD SECTION —

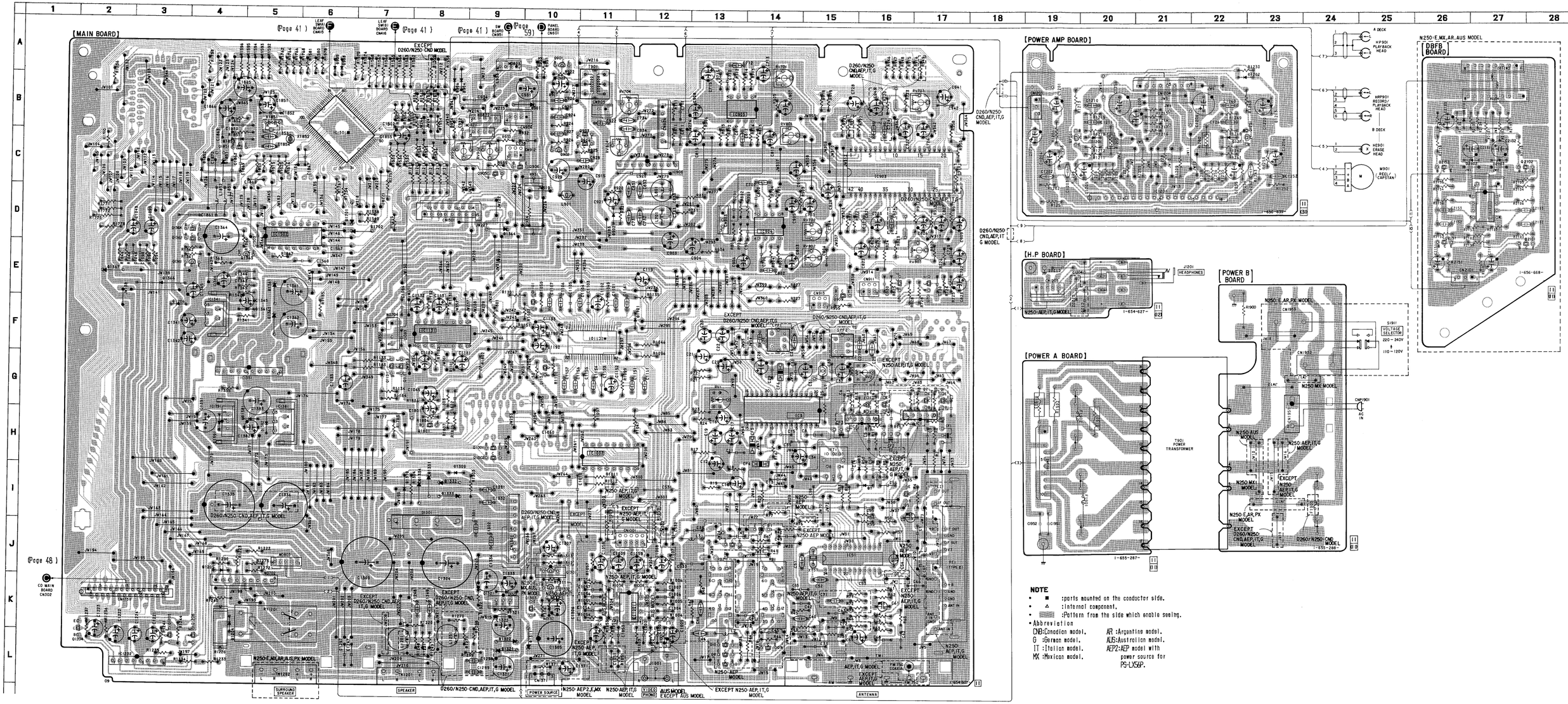


6-7. BLOCK DIAGRAM — MAIN SECTION —



6-8. PRINTED WIRING BOARD — MAIN SECTION —

• See page 17 for Circuit Boards Location. • See page 64 for Semiconductor Lead Layouts.



NOTE

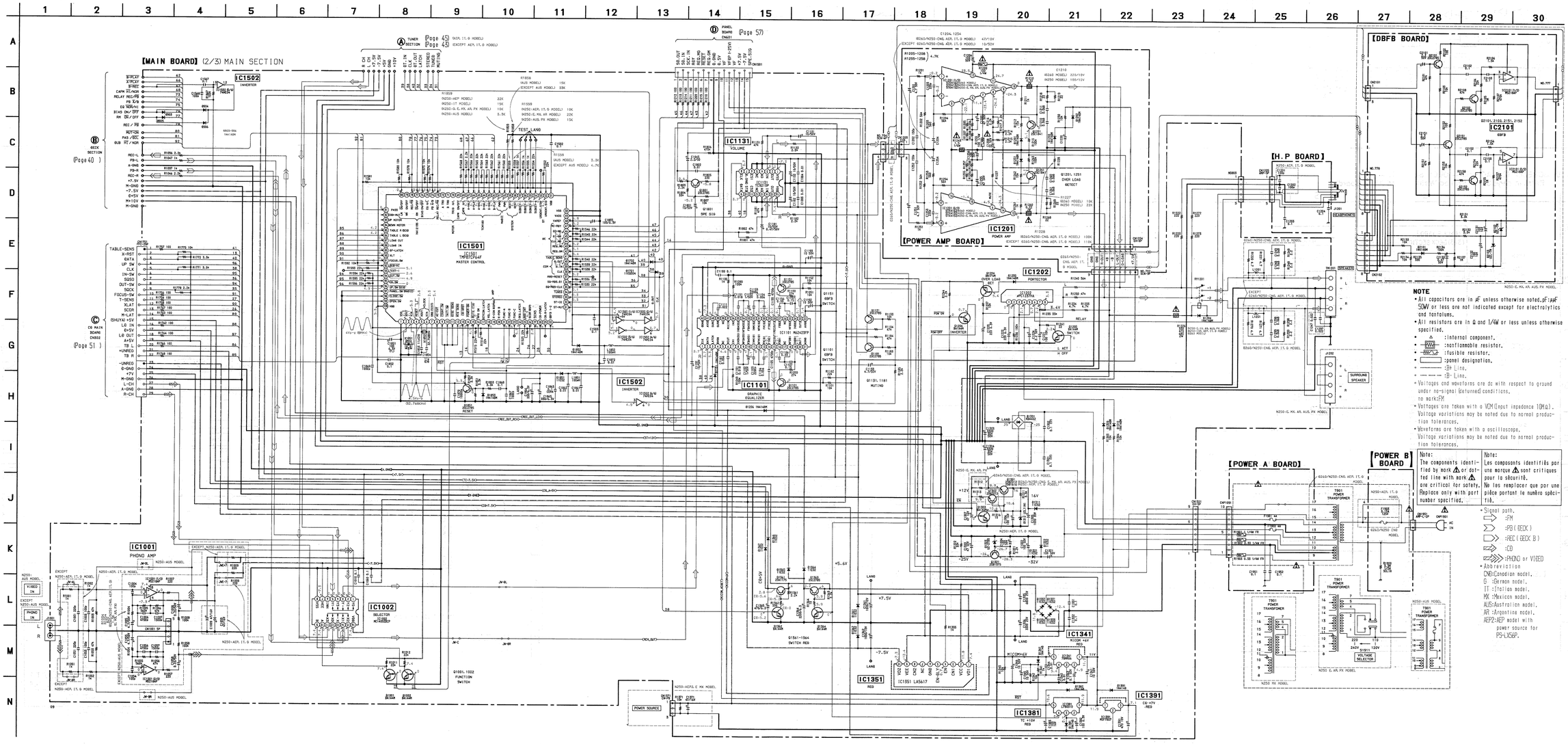
- ■ :parts mounted on the conductor side.
- △ :Internal component.
- ▭ :Pattern from the side which enable seeing.
- Abbreviation
  CND:Canadian model. AR :Argentine model.
  G :German model. AUS:Australian model.
  IT :Italian model. AEP2:AEP model with power source for PS-LX5AP.
  MX :Mexican model.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D901	B-10	IC1202	L-3
D902	D-11	IC1341	F-4
D903	A-6	IC1351	G-4
D904	B-8	IC1381	H-5
D905	A-6	IC1391	H-4
D906	B-8	IC1501	C-6
D1101	F-12	IC1502	D-5
D1201	C-20	IC2102	D-27
D1202	A-23		
D1203	B-23	Q1	G-17
D1204	K-4	Q2	G-17
D1205	J-4	Q3	G-16
D1206	F-3	Q4	G-16
D1251	C-22	Q5	I-16
D1301	I-8	Q6	J-13
D1309	I-8	Q7	J-14
D1310	I-7	Q8	L-13
D1311	K-10	Q9	L-14
D1312	K-10	Q10	L-13
D1321	L-9	Q11	L-13
D1322	K-9	Q701	E-17
D1331	I-8	Q801	E-16
D1332	I-8	Q901	A-10
D1333	I-8	Q902	C-10
D1334	I-8	Q903	B-11
D1341	F-5	Q904	C-11
D1361	E-5	Q905	C-9
D1362	F-5	Q906	C-9
D1364	D-9	Q909	E-15
D1366	E-3	Q1001	H-9
D1367	E-2	Q1002	H-9
D1382	H-3	Q1101	F-10
D1391	H-4	Q1131	G-7
D1701	D-6	Q1151	G-10
D1702	D-7	Q1181	G-7
D1851	C-4	Q1201	C-19
D1852	C-4	Q1204	L-2
D1853	C-4	Q1205	L-3
D2101	B-26	Q1206	L-4
D2102	C-27	Q1251	C-23
D2103	C-27	Q1301	J-10
		Q1302	K-10
IC1	H-17	Q1303	K-10
IC2	H-16	Q1321	K-9
IC3	H-14	Q1361	E-3
IC51	J-15	Q1362	D-3
IC903	C-16	Q1363	E-5
IC904	D-14	Q1364	D-3
IC905	B-13	Q1801	H-8
IC906	C-12	Q1851	C-4
IC1001	K-12	Q2101	D-28
IC1002	H-11	Q2102	C-28
IC1101	F-11	Q2151	D-26
IC1131	F-8	Q2152	C-26
IC1201	D-21		

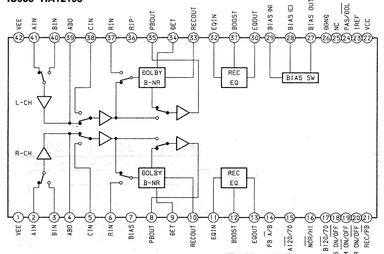
6-9. SCHEMATIC DIAGRAM — MAIN SECTION —

- **See page 62 for IC Block Diagrams. (IC1002, 1101, 1131, 1202, 1351, 1901)**
- **See page 18 for IC Pin Functions. (IC1501)**

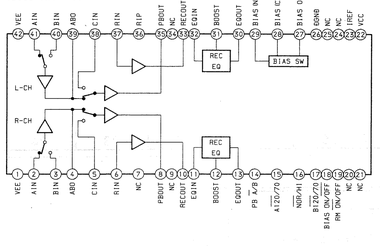

【MAIN BOARD】(2/3) MAIN SECTION
【DBFB BOARD】
【H.P BOARD】
【POWER AMP BOARD】
【POWER A BOARD】
【POWER B BOARD】
IC1501 TMP87C844F MASTER CONTROL
IC1502 INVERTER
IC1131 VOLUME
IC1101 GRAPHIC EQUALIZER
IC1201 POWER AMP
IC1202 PORTECTOR
IC1001 PHONO AMP
IC1002 SELECTOR
IC1341 MICOM +4V REG
IC1351 LA5617 REG
IC1381 TC +10V REG
IC1391 CM +7V REG
Q1001, 1002 FUNCTION SWITCH
Q1101 6DFB SWITCH
Q1151 6DFB SWITCH
Q1151, 1181 MUTING
Q1201, 1251 OVER LOAD DETECT
Q1341 MICOM RESET
Q1351 SWITCH REG
TEST LAND
SURROUND SPEAKER
POWER SOURCE
VOLTAGE SELECTOR
(Page 40)
(Page 51)
(Page 57)
NOTE
• All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
• All resistors are in Ω and 1/4W or less unless otherwise specified.
• Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark:FM
• Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
• Signal path. :FM :PB (DECK) :REC (DECK B) :CD :PHONO or VIDEO
• Abbreviation CND:Condition model, G :German model, IT :Italian model, MX :Mexican model, AUS:Australian model, AR :Argentina model, AEP2:AEP model with power source for PS-LX56F.

• IC Block Diagrams.

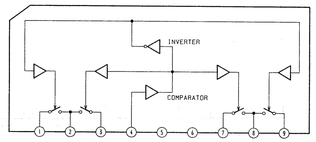
IC903 HA12195



IC903 HA12196

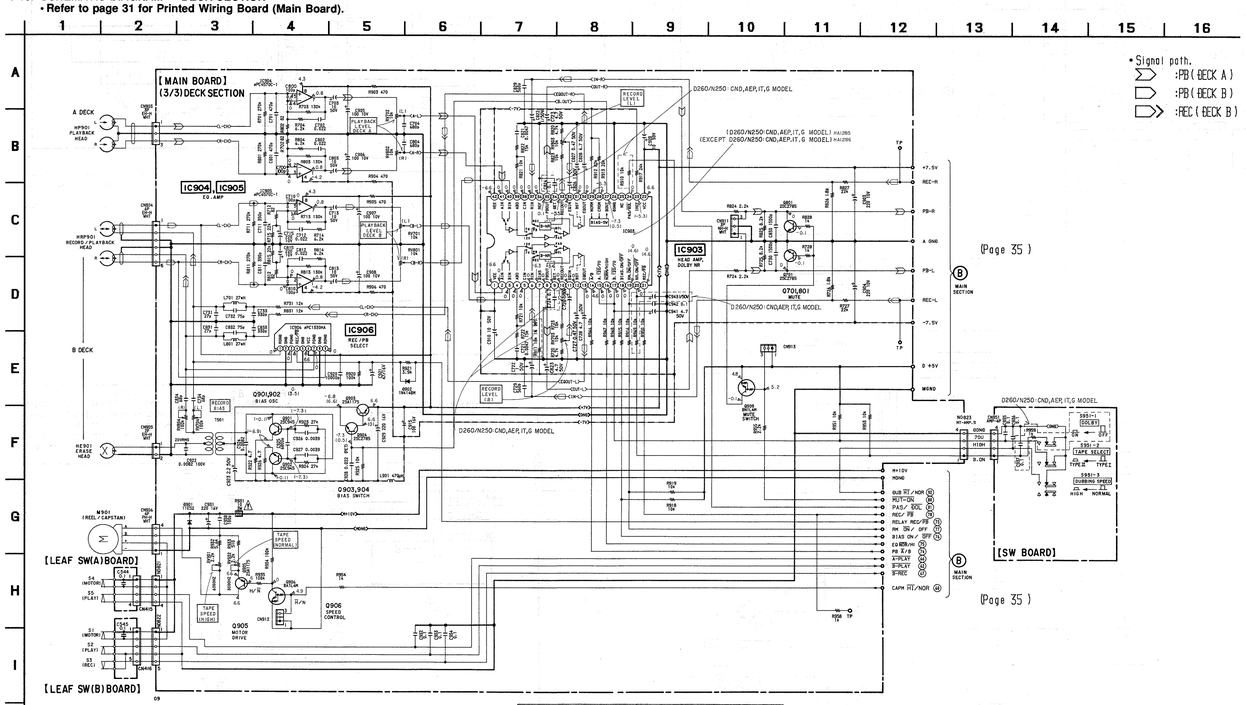


IC906 μPC1330HA



6-10. SCHEMATIC DIAGRAM — DECK SECTION —

• Refer to page 31 for Printed Wiring Board (Main Board).



NOTE

- All capacitors are in μF unless otherwise noted. pF: pμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- :nonflammable resistor.
- :panel designation.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

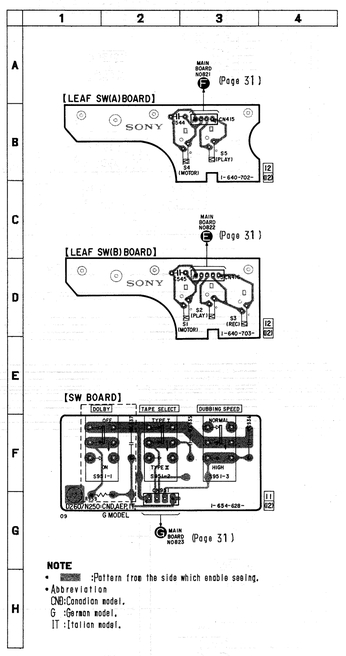
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark:PLAY
  ( ):REC
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.

- :B+ Line.
- :B- Line.
- :adjustment for repair.

• Abbreviation
CND:Canadian model.
G :German model.
IT :Italian model.

6-11. PRINTED WIRING BOARD — DECK SECTION —

• See page 17 for Circuit Boards Location.

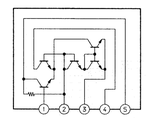


NOTE

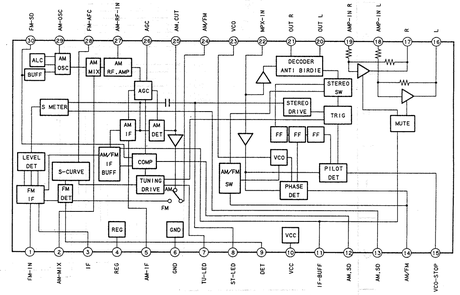
- :Pattern from the side which enable seeing.
- Abbreviation
  CND:Canadian model.
  G :German model.
  IT :Italian model.

• IC Block Diagrams.

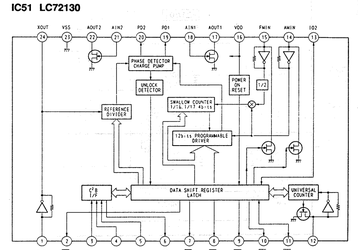
IC1, 2 TA7060AP



IC3 LA1835

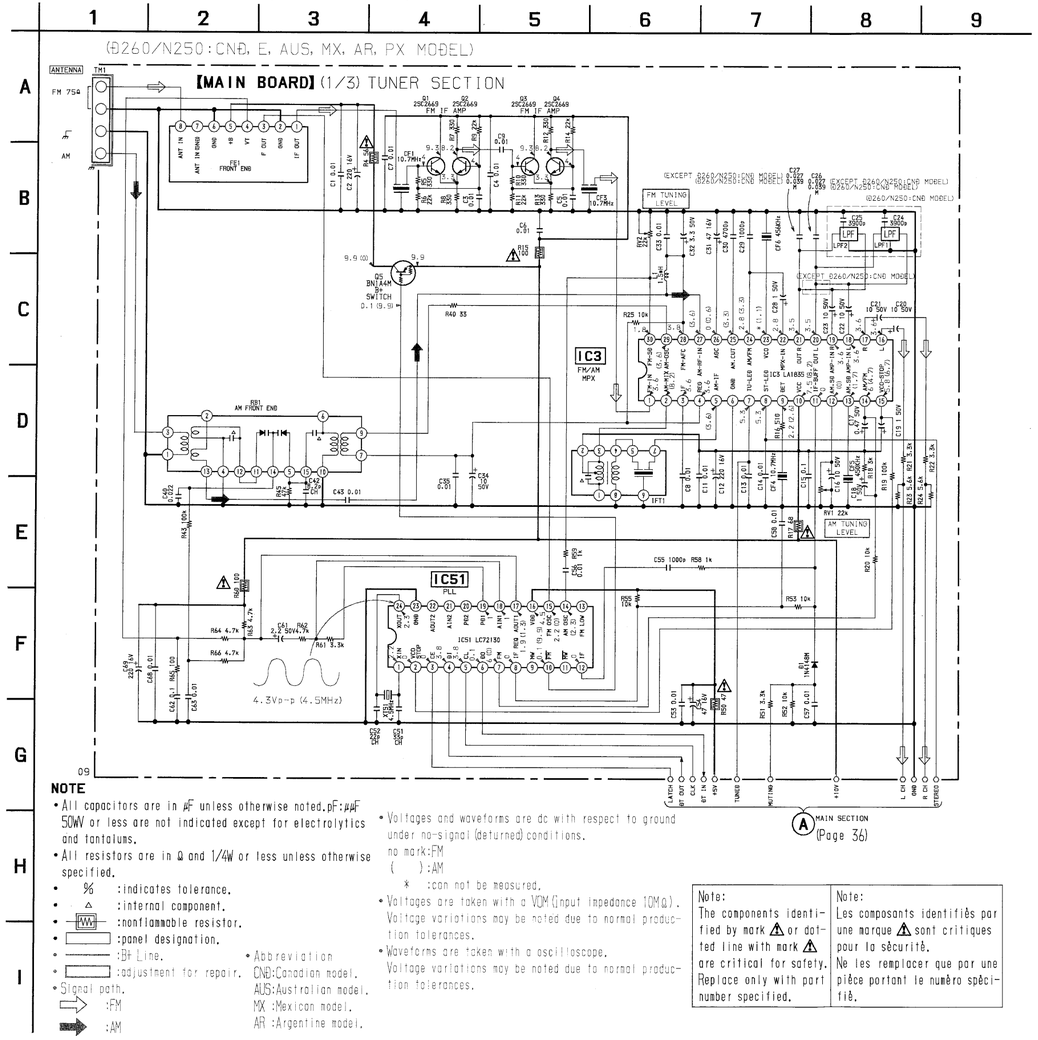


IC51 LC72130



6-12. SCHEMATIC DIAGRAM — TUNER SECTION —

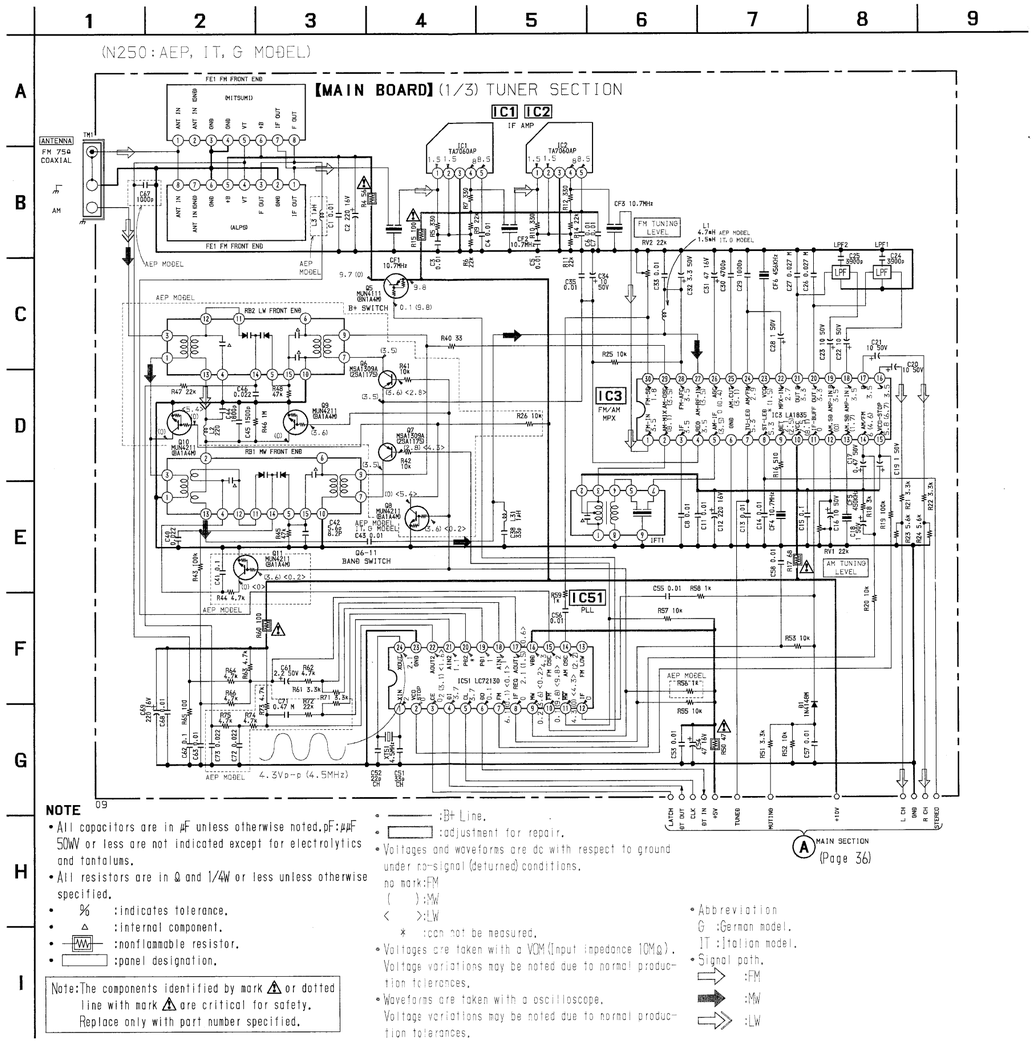
- Refer to page 31 for Printed Wiring Board (Main Board).
- See page 42 for IC Block Diagrams. (IC1,2, 3, 51)



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- △ :internal component.
- ▭ :nonflammable resistor.
- ▭ :panel designation.
- ——— :B+ Line.
- ▭ :adjustment for repair.
- Signal path.
  ⇨ :FM
  ➡ :AM
- Abbreviation
  CNÐ:Canadian model.
  AUS:Australian model.
  MX :Mexican model.
  AR :Argentine model.
- Voltages and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark:FM
  ( ):AM
  * :can not be measured.
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % :indicates tolerance.
- △ :internal component.
- ▭ :nonflammable resistor.
- ▭ :panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

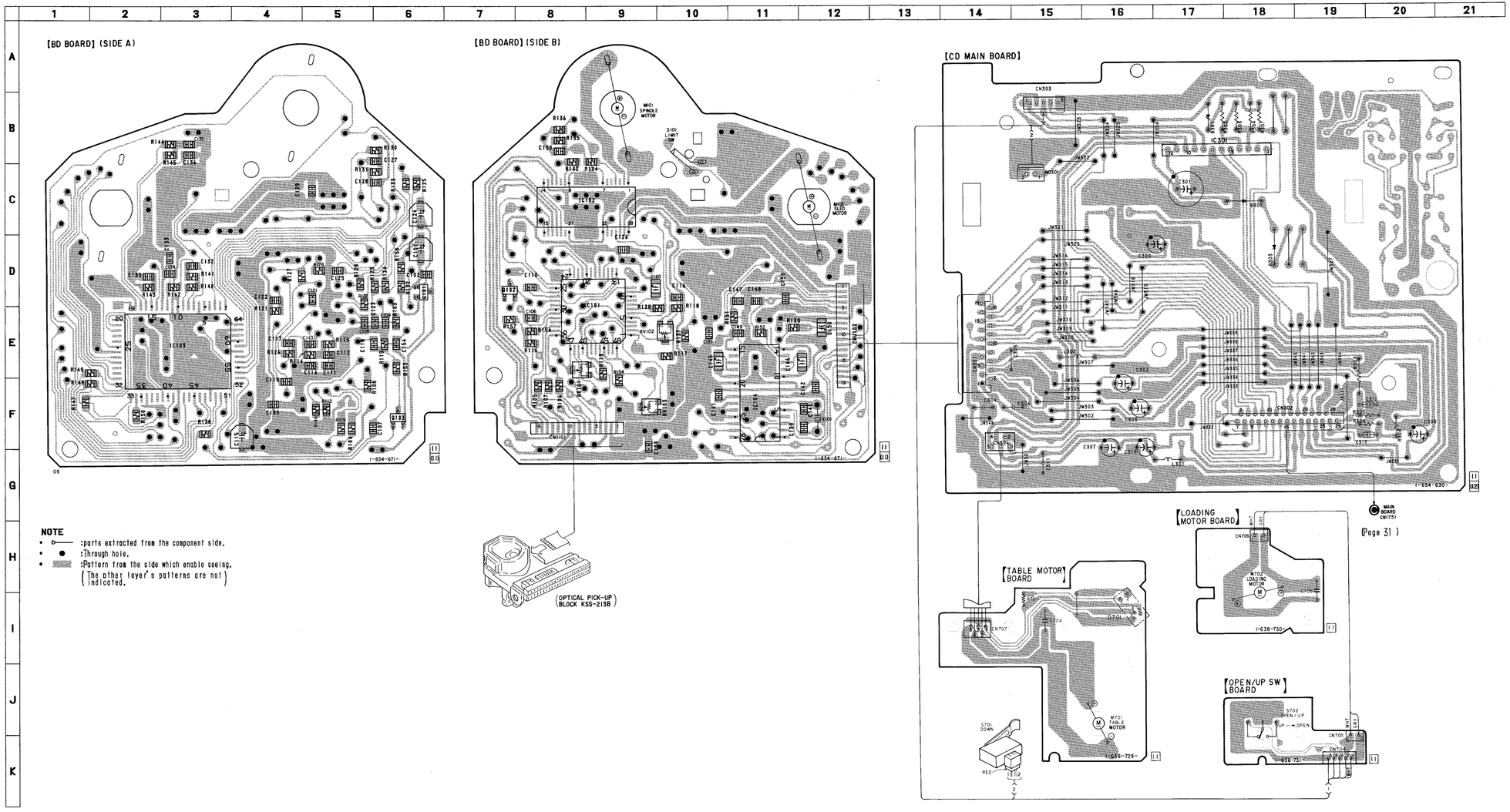
- ——— :B+ Line.
- ▭ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark:FM
  ( ):MW
  < >:LW
  * :can not be measured.
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  G :German model.
  IT :Italian model.
- Signal path.
  ⇨ :FM
  ➡ :MW
  ⇨ :LW

6-13. PRINTED WIRING BOARD — CD SECTION —

- See page 17 for Circuit Boards Location.
- See page 64 for Semiconductor Lead Layouts.

- **Semiconductor Location**

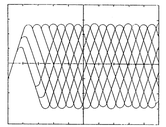
Ref. No.	Location
D301	B-17
D302	C-18
D303	D-18
D701	I-16
IC101	D-9
IC102	C-8
IC103	E-3
IC104	F-11
IC301	B-17
Q101	D-6
Q102	D-7
Q103	F-6


【BD BOARD】(SIDE A)
【BD BOARD】(SIDE B)
【CD MAIN BOARD】
【LOADING MOTOR BOARD】
【TABLE MOTOR BOARD】
【OPEN/UP SW BOARD】
(OPTICAL PICK-UP BLOCK KSS-213B)
MAIN BOARD CN751
(Page 31)
NOTE
• ○—— :parts extracted from the component side.
• ● :Through hole.
• ▒ :Pattern from the side which enable seeing.
(The other layer's patterns are not indicated.)

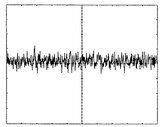
6-14. SCHEMATIC DIAGRAM — CD SECTION —

• **Waveforms.**

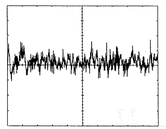
① IC101 ㉛ 1.4Vp-p



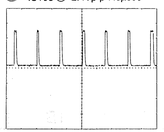
② IC101 ㊹ 8mVp-p 0.2ms/DIV



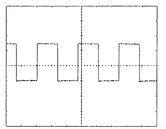
③ IC101 ② 20mVp-p 2ms/DIV



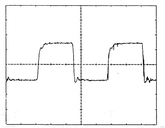
④ IC103 ③ 2.4Vp-p 7.5μsec



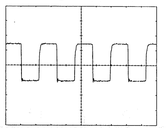
⑤ IC103 ㉘ 5.1Vp-p 137μsec



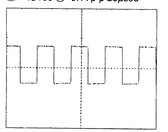
⑥ IC103 ㉕ 5.1Vp-p 232.7μsec



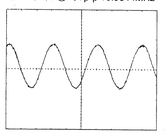
⑦ IC103 ㉒ 5.1Vp-p 472.7μsec

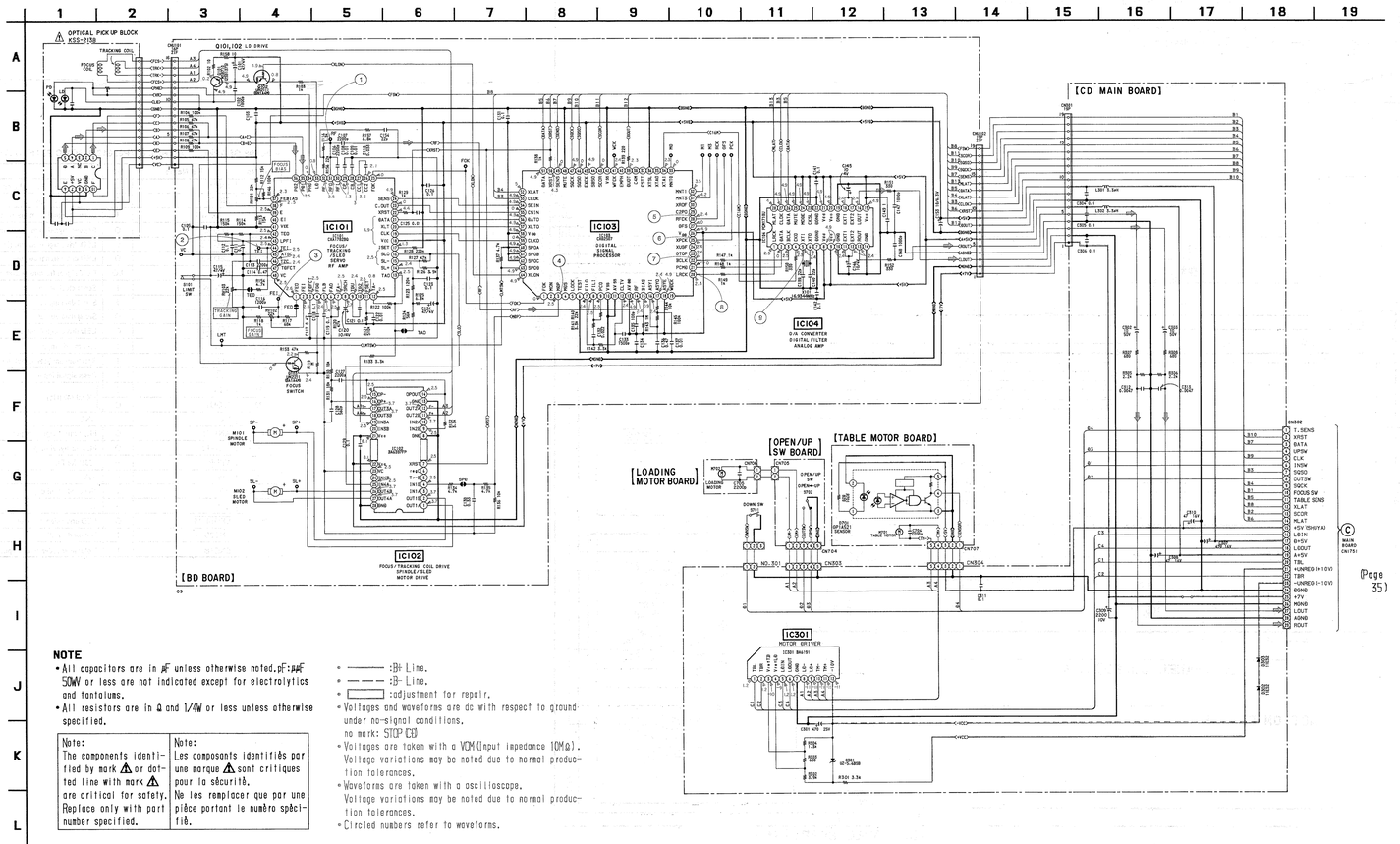


⑧ IC103 ⑱ 5.1Vp-p 23μsec



⑨ IC104 ⑤ 3Vp-p 16.9344MHz





NOTE

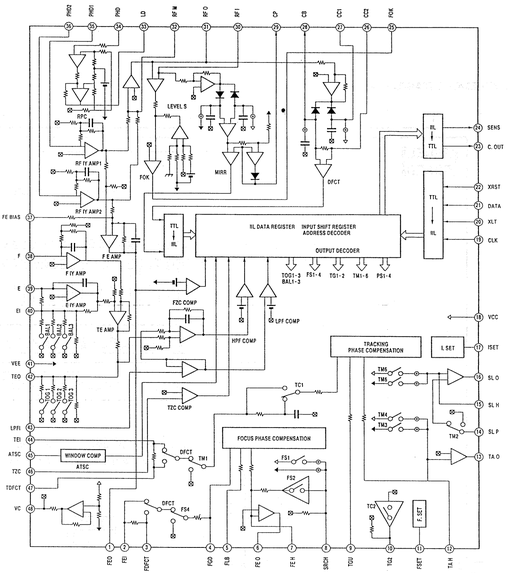
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

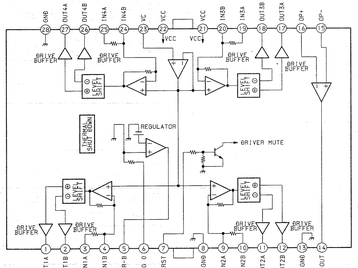
- ——— : B+ Line.
- – – – : B– Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark: STOP (⊟)
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

• **IC Block Diagrams.**

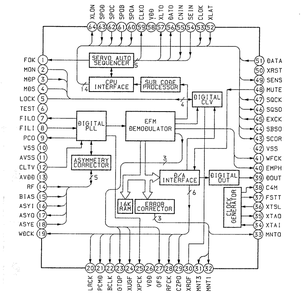
IC101 CXA1782BQ



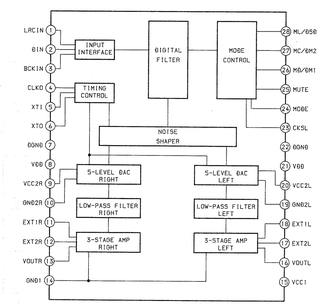
IC102 BA6397FP


GND OUT1A OUT1B IN1A IN1B VC VCC VCC IN2B IN2A OUT2B OUT2A OP+ OP-
DRIVE BUFFER
LEVEL SHIFT
THERMAL SHUT DOWN
REGULATOR
DRIVER MUTE
OUT1A OUT1B IN1B IN1A TR-IN REG-IN XRST GND IN2A IN2B OUT2A OUT2B GND OP-/OUT

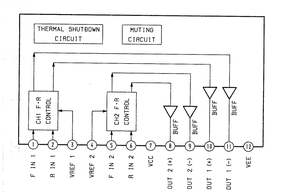
IC103 CXD2507

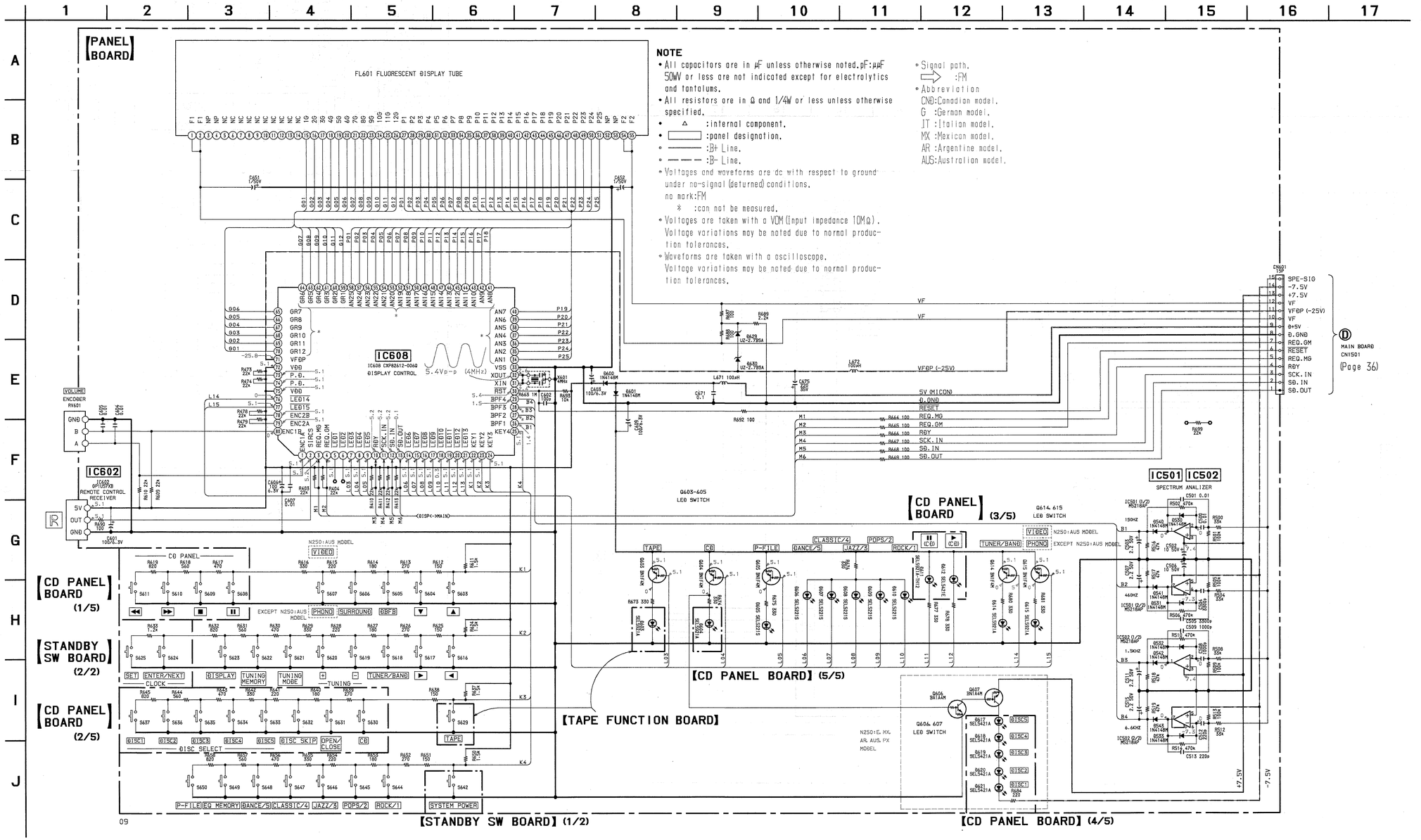

SERVO AUTO SEQUENCER
CPU INTERFACE
SUB CODE PROCESSOR
DIGITAL CLK
DIGITAL PLL
EFM DEMODULATOR
ASYMMETRY CORRECTOR
D/A INTERFACE
DIGITAL OUT
14K RAM
ERROR CORRECTOR
CLOCK GENERATOR
FOK MON MDP MDS LOCK TEST FILO FILI PCO VSS AVSS CLTV AVDD RF BIAS ASYI ASYO ASYE VDCK
DATA XRST SENS MUTE SQCK SQSO SCKC SBSO SCOR VSS WFCK EMPH SOUT C4M FSTT XTSL XTAO XTAI MNTO

IC104 PCM1710U


LRCIN BIN BCKIN CLKO XTI XTO DGND VDD VCC2R GND2R EXT1R EXT2R VOUTR GND1
INPUT INTERFACE
TIMING CONTROL
NOISE SHAPER
DIGITAL FILTER
MODE CONTROL
5-LEVEL DAC RIGHT
LOW-PASS FILTER RIGHT
3-STAGE AMP RIGHT
5-LEVEL DAC LEFT
LOW-PASS FILTER LEFT
3-STAGE AMP LEFT
ML/DSD MC/DM2 MD/DM1 MUTE MODE CKSL DGND VDD VCC2L GND2L EXT1L EXT2L VOUTL VCC1

IC301 BA6191

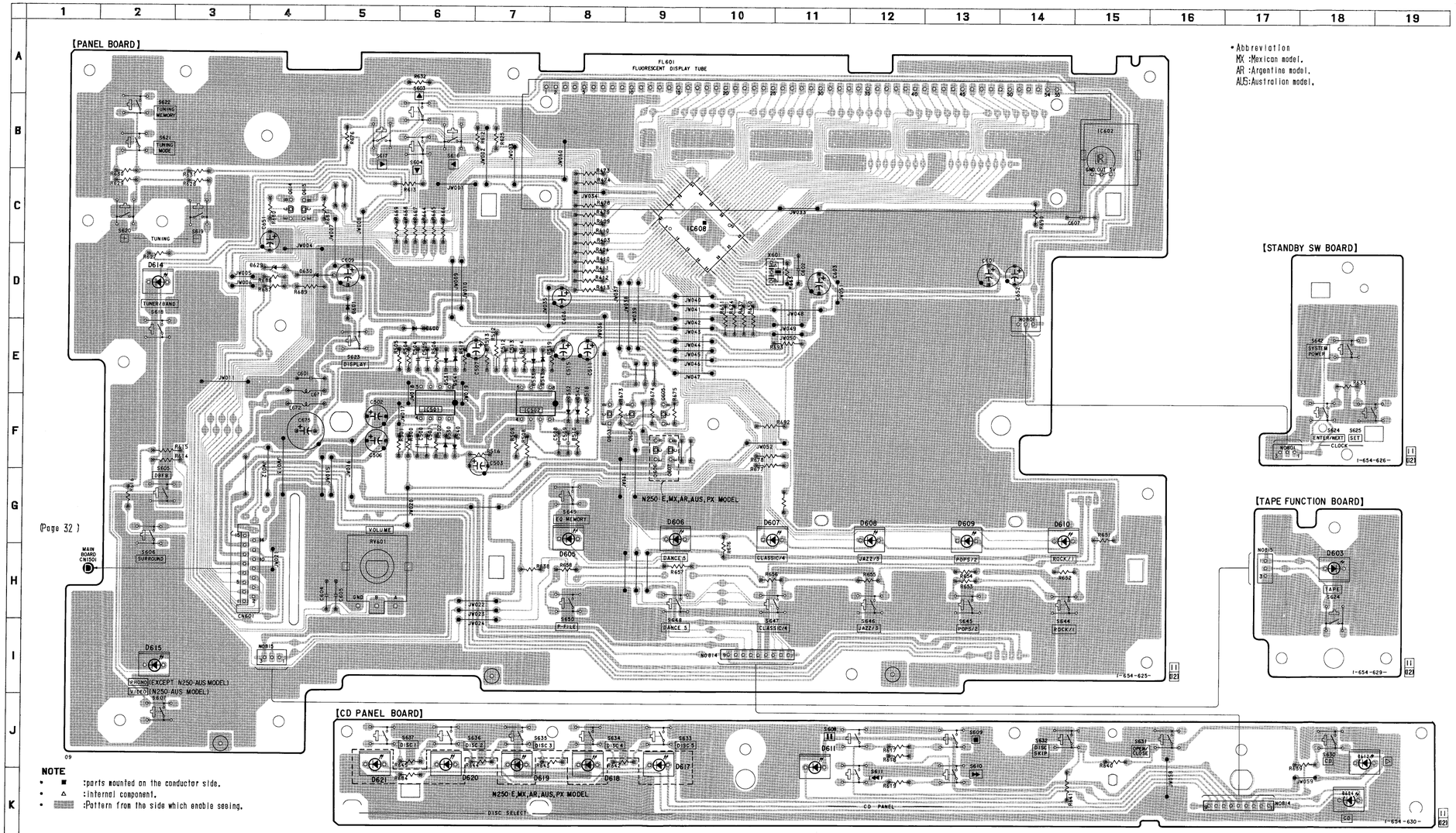



[PANEL BOARD]
FL601 FLUORESCENT DISPLAY TUBE
IC608
IC608 CXP82612-006Q
DISPLAY CONTROL
5.4Vp-p
(4MHz)
IC602
REMOTE CONTROL RECEIVER
VOLUME ENCODER RV601
IC501 IC502
SPECTRUM ANALIZER
NOTE
• All capacitors are in μF unless otherwise noted. pF: μμF
50WV or less are not indicated except for electrolytics and tantalums.
• All resistors are in Ω and 1/4W or less unless otherwise specified.
• △ :internal component.
• □ :panel designation.
• ——— :B+ Line.
• — — — :B- Line.
• Voltages and waveforms are dc with respect to ground under no-signal (deturned) conditions.
no mark:FM
* :can not be measured.
• Voltages are taken with a VOM (Input impedance 10MΩ).
Voltage variations may be noted due to normal production tolerances.
• Waveforms are taken with a oscilloscope.
Voltage variations may be noted due to normal production tolerances.
• Signal path.
⇨ :FM
• Abbreviation
CND:Canadian model.
G :German model.
IT :Italian model.
MX :Mexican model.
AR :Argentine model.
AUS:Australian model.
CD PANEL BOARD (1/5)
STANDBY SW BOARD (2/2)
CD PANEL BOARD (2/5)
[STANDBY SW BOARD] (1/2)
[TAPE FUNCTION BOARD]
CD PANEL BOARD (3/5)
[CD PANEL BOARD] (5/5)
[CD PANEL BOARD] (4/5)
Q603-605 LED SWITCH
Q606 607 LED SWITCH
Q614 615 LED SWITCH
N250:AUS MODEL
VIDEO
EXCEPT N250:AUS MODEL
PHONO
N250:E, MX, AR, AUS, PX MODEL
SPE-SIG
-7.5V
+7.5V
VF
VFDP (-25V)
B+5V
D.GND
REQ.GM
RESET
REQ.MG
RBY
SCK.IN
SD.IN
SD.OUT
MAIN BOARD CN1501
(Page 36)
5V (MICOM)
REMOTE CONTROL RECEIVER
SET
ENTER/NEXT
CLOCK
DISPLAY
TUNING MEMORY
TUNING MODE
TUNING
TUNER/BAND
DISC SELECT
DISC SKIP
OPEN/CLOSE
CD
TAPE
SYSTEM POWER
P-FILE
EQ MEMORY
DANCE/3
CLASSIC/4
JAZZ/3
POPS/2
ROCK/1
TAPE
CD
P-FILE
DANCE/3
CLASSIC/4
JAZZ/3
POPS/2
ROCK/1
TUNER/BAND
PHONO
SURROUND
DBFB
09

• IC608 GRAPHIC CONTROL (CXP82612-006Q) IC PIN FUNCTIONS

Pin No.	Pin Name	I/O	Function
1	ENC1A	I	Volume encoder signal input.
2	SIRCS	I	SIRCS signal input.
3	REQ. MG	I	Reguest signal from master control.
4	REQ. GM	O	Reguest signal to master control.
5, 6	$\overline{\text{LED1, 2}}$	O	LED drive signal output. (Not used.)
7–9	$\overline{\text{LED3–5}}$	O	LED drive signal output.
10	RDY	I/O	RDY signal from/to master control.
11	SCK IN	I	Serial clock input.
12	SD IN	I	Serial data input.
13	SD OUT	O	Serial data output.
14–21	$\overline{\text{LED6–13}}$	O	LED drive signal output.
22–25	KEY1–4	I	Key matrix input.
26–29	BPF1–4	I	Spectram analizer signal input.
30	$\overline{\text{RST}}$	I	Reset signal input.
31	X IN	I	X'tal (4MHz).
32	X OUT	O	
33	V_{SS}	–	GND
34–58	AN1–25	O	FL segment signal output.
59–70	GR1–12	O	FL grid signal output.
71	VFDP	–	–25V for FL
72	V_{DD}	–	+5V
73, 74	PD	I	Not used. (Pull up)
75	V_{DD}	–	+5V
76, 77	$\overline{\text{LED14, 15}}$	O	LED drive signal output.
78, 79	ENC2B, A	I	Not used. (Pull up)
80	ENC1B	I	Volume encoder signal input.

• See page 17 for Circuit Boards Location.
• See page 64 for Semiconductor Lead Layouts.

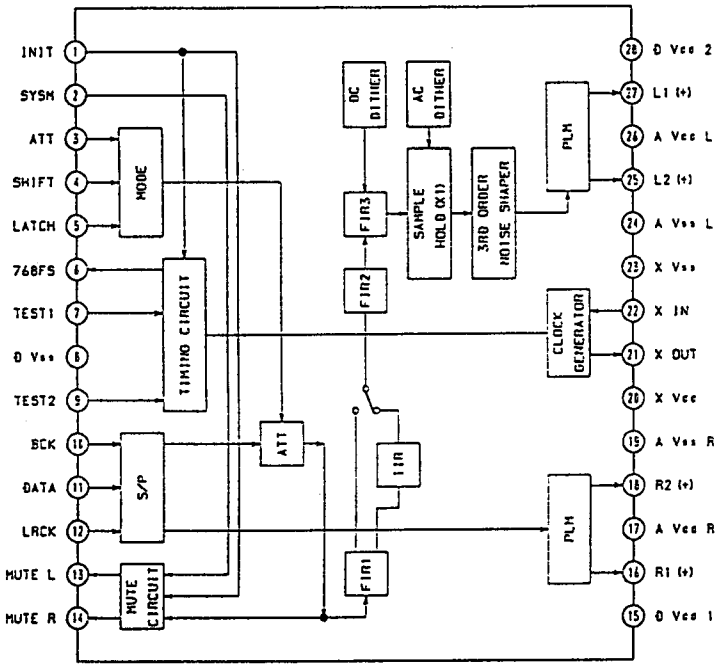


• Abbreviation
MX :Mexican model.
AR :Argentine model.
AUS:Australian model.

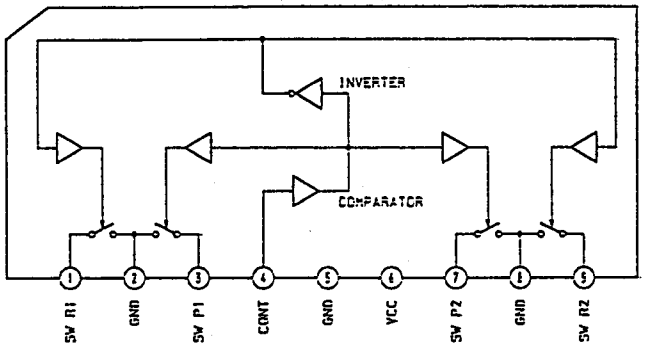
• **Semiconductor Location**

Ref. No.	Location
D530	F-6
D531	E-6
D532	F-8
D533	E-7
D540	F-6
D541	E-6
D542	F-8
D543	E-7
D600	E-6
D601	D-5
D603	H-18
D604	K-18
D605	H-8
D606	G-9
D607	G-11
D608	G-12
D609	G-13
D610	G-14
D611	J-11
D612	J-18
D614	D-2
D615	I-2
D617	J-9
D618	J-8
D619	J-7
D620	J-6
D621	J-5
D629	D-4
D630	D-4
IC501	F-6
IC502	F-7
IC602	B-15
IC608	C-10
Q603	E-8
Q604	F-9
Q605	F-9
Q606	F-9
Q607	F-9
Q614	C-4
Q615	C-4

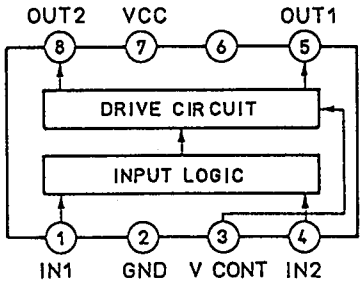
IC103 CXD2565M



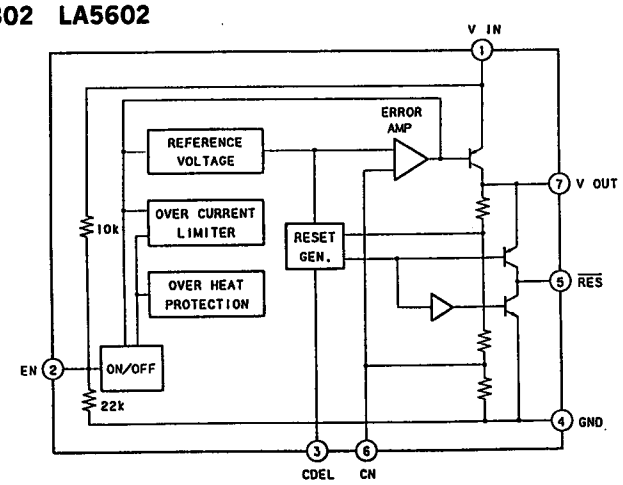
IC906 μPC1330HA



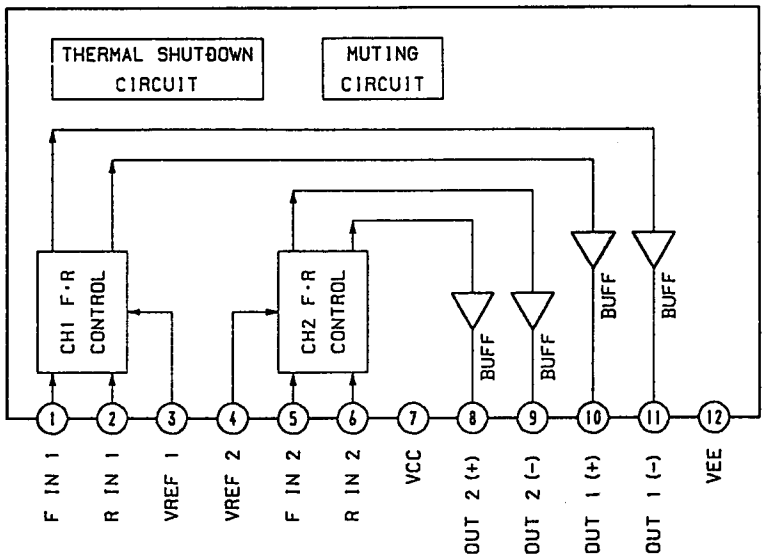
IC1103 LB1639



IC302 LA5602



IC341 BA6191



5-15. PIN DESCRIPTIONS

• IC601 μPD78042GF-053-3B9

Pin No.	Pin Name	I/O	Pin Description
1	7G	O	FL tube digit output
2	6G	O	FL tube digit output
3	5G	O	FL tube digit output
4	4G	O	FL tube digit output
5	3G	O	FL tube digit output
6	2G	O	FL tube digit output
7	1G	O	FL tube digit output
8	VDD	—	Microcomputer power (5V)
9	CL	O	Serial clock output to LC7218 (PLL IC).
10	SO/IF COUNT NG	O	Serial data output to LC7218 (PLL IC).
11	SI	I	Serial data input from LC7218 (PLL IC).
12	CE/TIMER CLOCK	I	Chip enable input from LC7218 (PLL IC).
13	TUNED IN	I	Modulation signal from tuner block. (L···Field)
14	STEREO IN	I	Stereo signal from tuner block. (L···FM STEREO received)
15	MUTING	O	Audio mute (L : Mute)
16	AUX. OUT	—	Not used.
17	RESET	—	Microcomputer reset pin
18	FUNCTION A	O	Function control
19	FUNCTION B	O	Function control
20	AVSS	—	A/D GND for key input.
21	DISPLAY. DATA. 3	I	CD display data bit 3
22	DISPLAY. DATA. 2	I	CD display data bit 2
23	DISPLAY. DATA. 1	I	CD display data bit 1
24	DISPLAY. DATA. 0	I	CD display data bit 0
25	AUB. OUT	O	AU BUS output
26	RELAY	—	Not used.
27	KEY IN1	I	Key input (A/D change line 1)
28	KEY IN0	I	Key input (A/D change line 0)
29	AVDD	—	A/D power for key input (5V)
30	AVREF	—	A/D reference voltage (5V)
31	CD. BUSY	I	At H, CD is Active. (At H, tuner is fundamentally not operated.)
32	—	—	Not used.
33	GND	—	Microcomputer GND
34	X1	—	Crystal connection pin for Main•clock oscillator.
35	X2	—	Crystal connection pin for Main•clock oscillator.
36	POWER. MUTE	O	Power mute (L : Mute)
37	TAPE. LED	O	Tape function LED
38	CD. LED	O	CD function LED
39	TUNER. LED	O	Tuner function LED
40	PHONO. LED	O	Phono function LED
41	EQ. C	—	Not used.
42	EQ. B	—	Not used.
43	EQ. A	—	Not used.
44	HOLD	I	Power cut detection pin (Normally : H, AC no connect : L)

Pin No.	Pin Name	I/O	Pin Description
45	CD. CLOCK	I	CD display data clock
46	SIRCS IN	I	SIRCS input
47	AUB. IN	I	AU BUS input
48	—	—	Connect to GND.
49	FUNCTION. C	—	Not used.
50	VOL. B	O	Volume control (VOL DOWN)
51	VOL. A	O	Volume control (VOL UP)
52	VDD	—	Microcomputer power (5V)
53	—	—	Not used.
54	DIODE. IN2	I	Distination•model discrimination input * 1
55	DIODE. IN1	I	Distination•model discrimination input * 1
56	S0	O	FL tube segment output
57	S1	O	FL tube segment output
58	S2	O	Distination•model discrimination output * 1
59	S3	O	Distination•model discrimination output * 1
60	S4	O	FL tube segment output
61	S5	O	Distination•model discrimination output * 1
62	S6	O	FL tube segment output
63	S7	O	FL tube segment output
64	S8	O	FL tube segment output
65	S9	O	FL tube segment output
66	S10	O	FL tube segment output
67	S11	O	FL tube segment output
68	S12	O	FL tube segment output
69	S13	O	FL tube segment output
70	S14	O	FL tube segment output
71	V. LOAD	—	Minus voltage for FL tube.
72	S15	O	FL tube segment output
73	S16	O	FL tube segment output
74	S17	O	FL tube segment output
75	S18	O	FL tube segment output
76	S19	O	FL tube segment output
77	S20	O	FL tube segment output
78	VOL. LED	O	Volume LED output
79	9G	—	Not used.
80	8G	O	FL tube digit output

* 1

[DIODE MATRIX] (Pin No. is IC601's pin No.)

Output / Input	Pin⑥①	Pin⑤⑨	Pin⑤⑧
Pin⑤⑤	×	○	○
Pin⑤④	○	×	A

× : Not use for diode.
○ : Use for diode.

〔DISTINATION SELECT〕

	A195	D250	G2000
A	×	×	○

SECTION 6
EXPLODED VIEWS

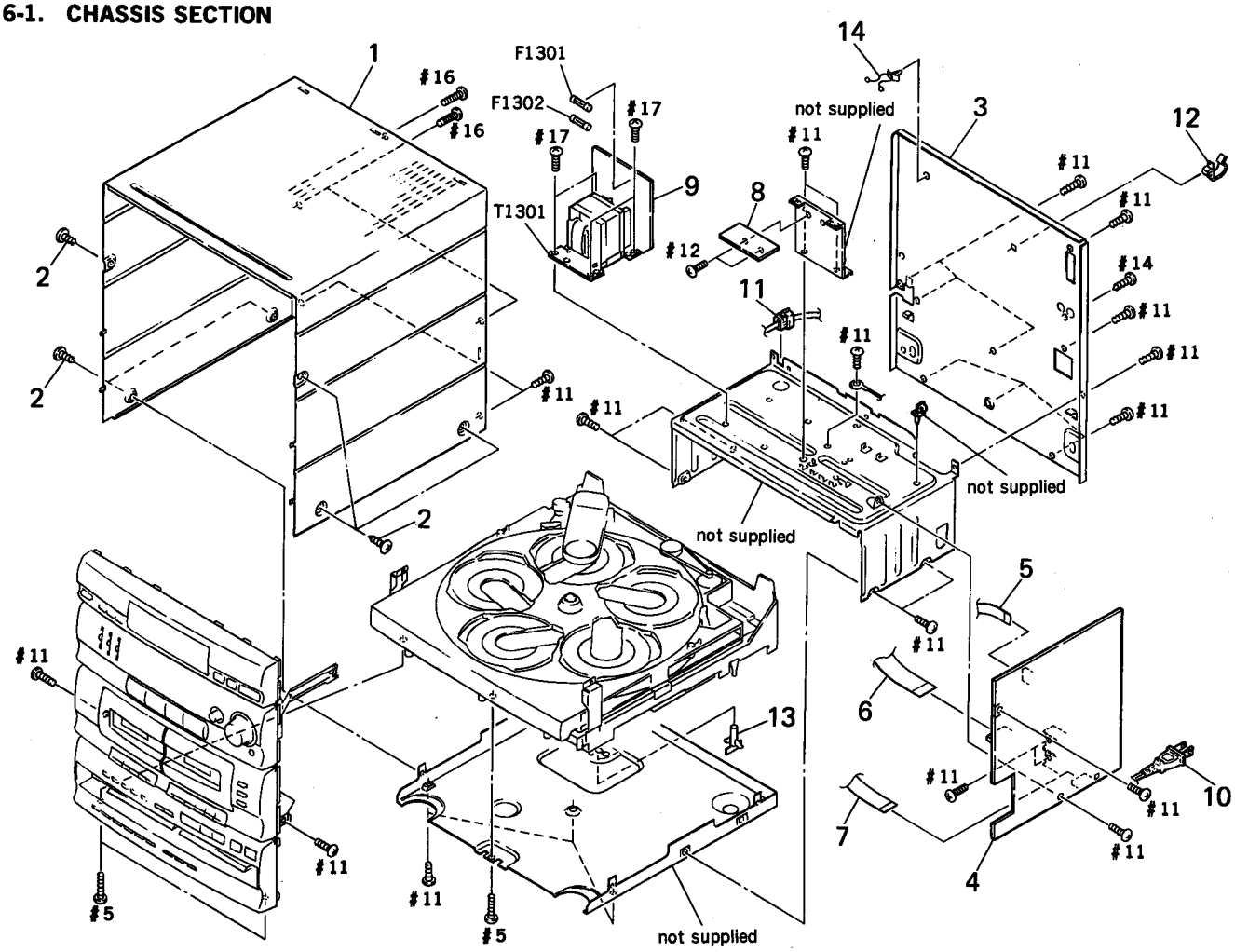
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

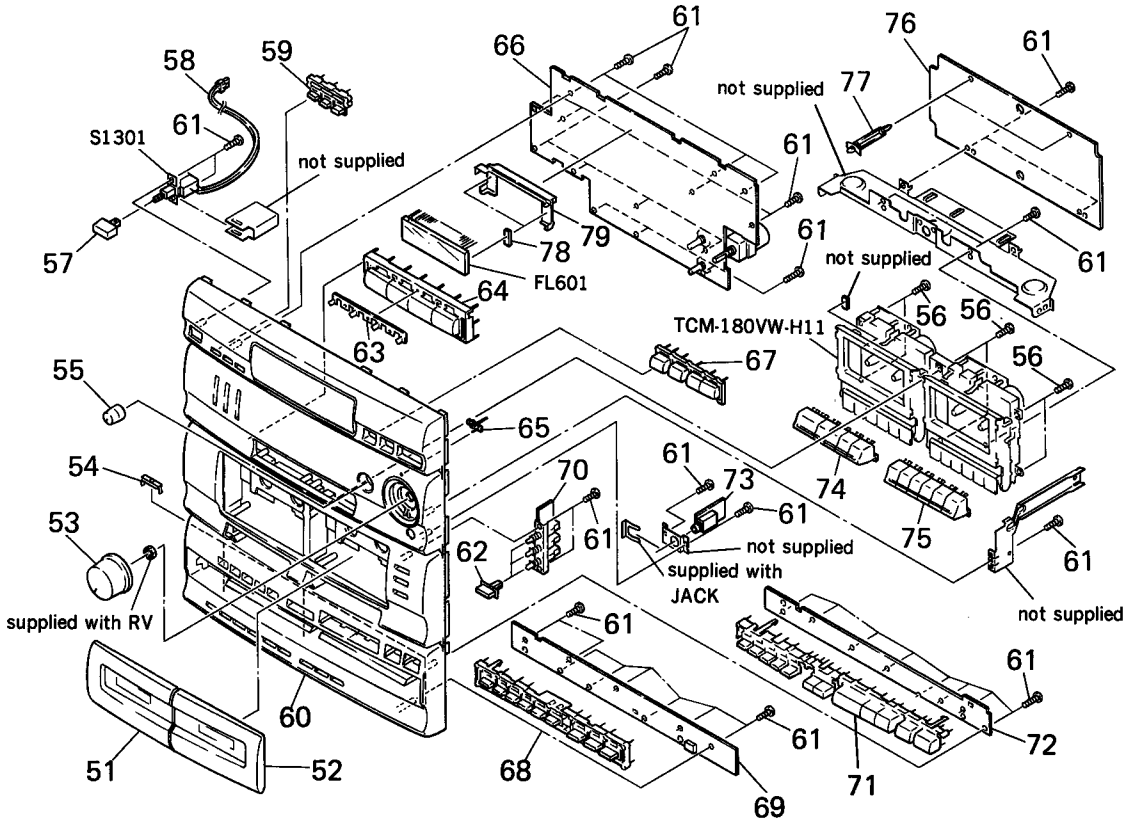
6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
* 1	4-962-724-11	CASE (CDM) (A195, D250)	
* 1	4-962-724-71	CASE (CDM) (G2000)	
2	3-363-099-01	SCREW (CASE 3 TP2)	
* 3	4-962-737-01	PANEL, BACK (D250)	
* 3	4-962-737-11	PANEL, BACK (G2000)	
* 3	4-962-737-21	PANEL, BACK (A195)	
* 4	A-4365-921-A	MAIN BOARD, COMPLETE (A195, D250)	
* 4	A-4365-939-A	MAIN BOARD, COMPLETE (G2000)	
5	1-590-576-11	WIRE, FLAT TYPE (11 CORE)	
6	1-751-746-11	WIRE (FLAT TYPE) (21 CORE)	
7	1-765-234-11	CORD, CONNECTION (17 CORE)	

Ref. No.	Part No.	Description	Remark
* 8	1-650-506-11	POWER AMPLIFIER BOARD	
* 9	1-650-598-11	POWER BOARD	
⚠10	1-690-609-11	CORD, POWER	
* 11	3-703-244-00	BUSHING (2104), CORD	
* 12	4-949-235-01	HOOK	
13	4-937-945-01	PLATE (TRANSPORT), LOCK	
14	4-953-346-21	CLAMP, LEAD	
⚠F1301	1-576-108-11	FUSE (4A/125V)	
⚠F1302	1-576-108-11	FUSE (4A/125V)	
⚠T1301	1-423-912-11	TRANSFORMER, POWER (D250, G2000)	
⚠T1301	1-423-943-11	TRANSFORMER, POWER (A195)	

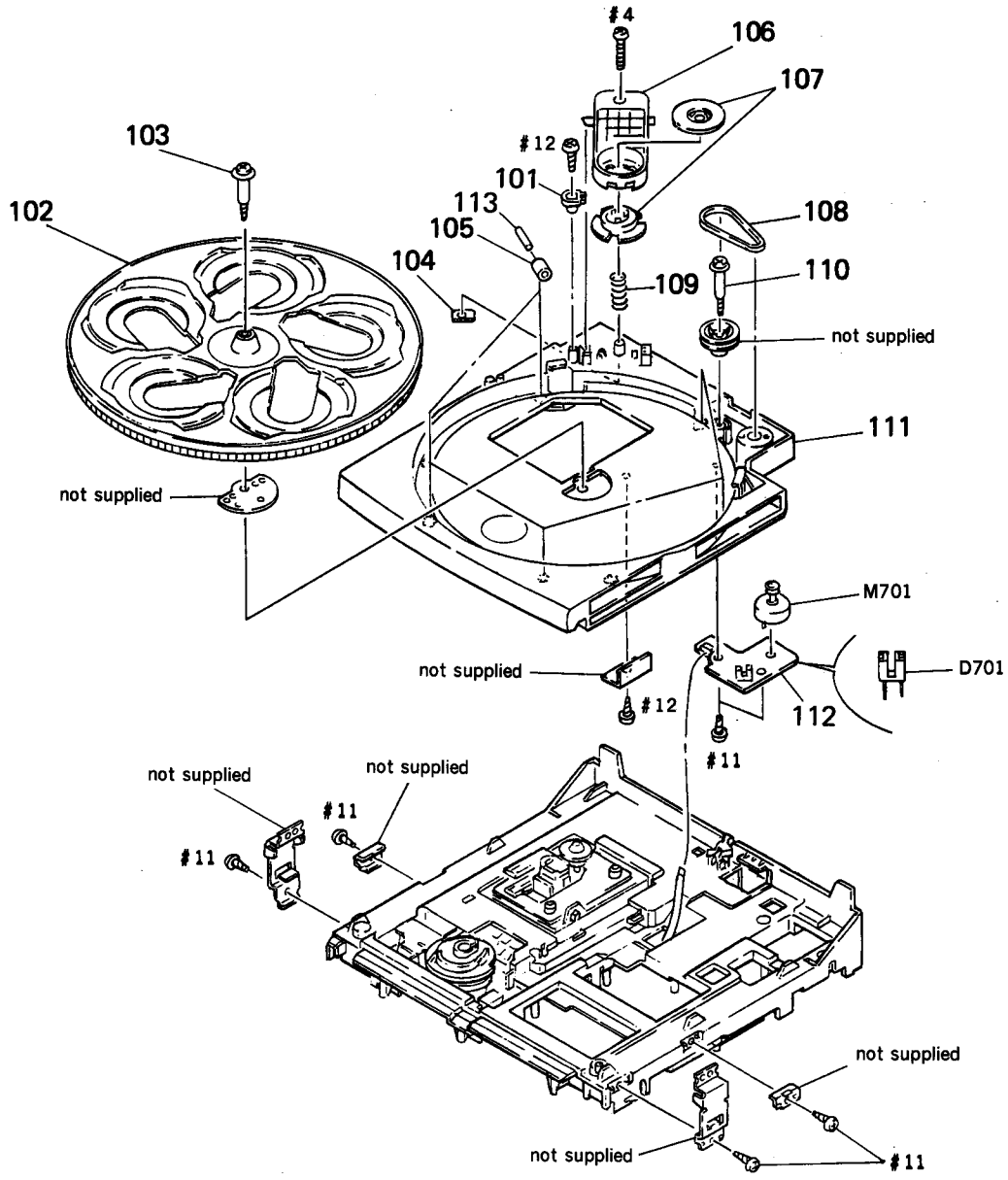
6-2. FRONT PANEL SECTION



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

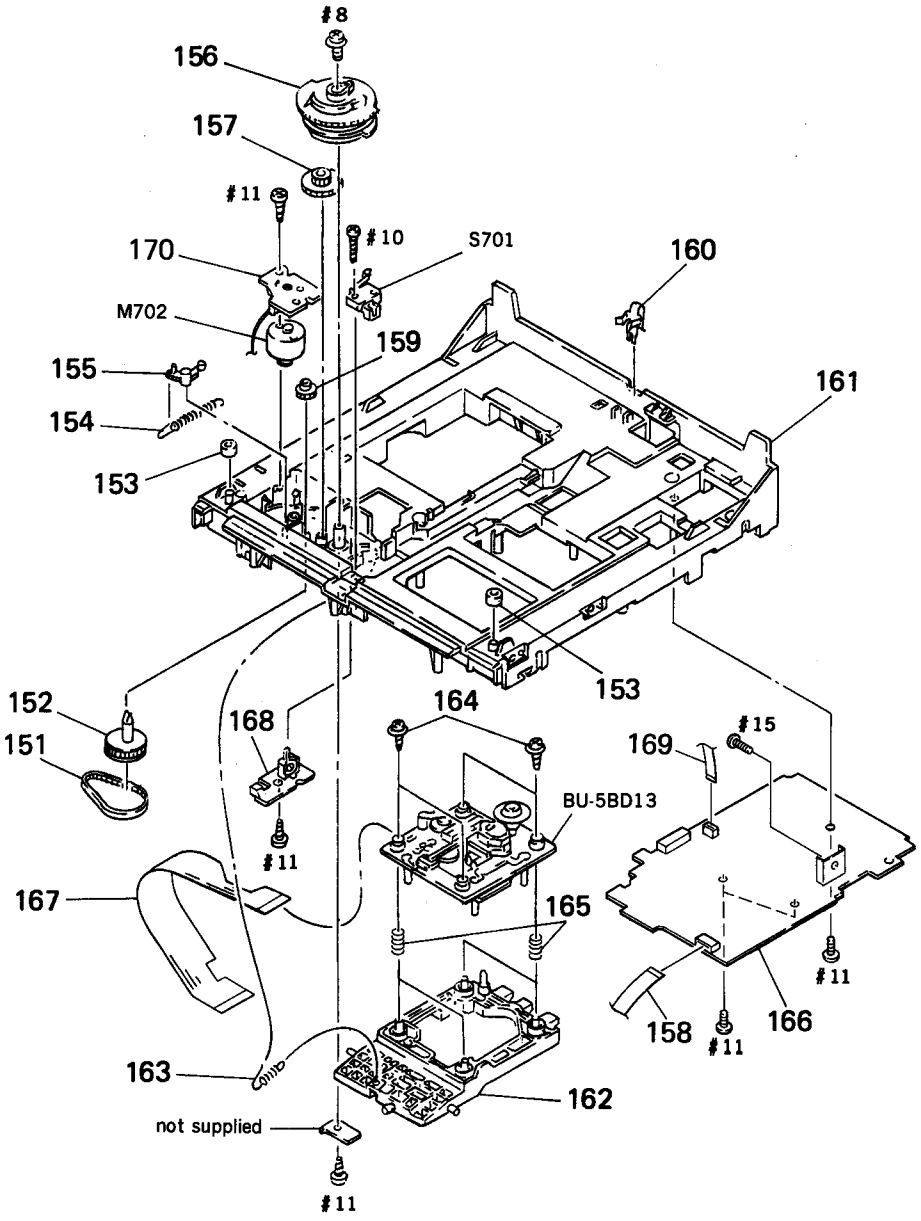
Ref. No.	Part No.	Description	Remark
51	X-4944-276-1	LID (A) ASSY, CASSETTE (A195, D250)	
51	X-4944-323-1	LID (A) ASSY, CASSETTE (G2000)	
52	X-4944-277-1	LID (B) ASSY, CASSETTE (A195, D250)	
52	X-4944-324-1	LID (B) ASSY, CASSETTE (G2000)	
53	4-955-635-01	KNOB (V)	
54	4-962-705-01	CHASSIS, HOLDER	
55	4-962-703-02	KNOB (SUR)	
56	4-951-620-11	SCREW (2.6X10), +BVTP	
57	4-930-783-31	BUTTON (PO)	
58	1-690-708-11	CORD (WITH CONNECTOR)	
59	4-962-660-01	BUTTON (MEMORY)	
60	X-4944-677-1	PANEL ASSY, FRONT (D250)	
60	X-4944-678-1	PANEL ASSY, FRONT (G2000)	
60	X-4944-679-1	PANEL ASSY, FRONT (A195)	
61	4-951-620-01	SCREW (2.6X8), +BVTP	
62	4-964-288-01	BUTTON (DDT-3)	
63	4-962-669-01	INDICATOR (FU)	
64	4-962-662-01	BUTTON (FU) (A195, D250)	
64	4-962-662-11	BUTTON (FU) (G2000)	
65	4-962-682-01	INDICATOR (VO)	
* 66	A-4365-917-A	PANEL BOARD, COMPLETE (D250)	
* 66	A-4365-933-A	PANEL BOARD, COMPLETE (G2000)	
* 66	A-4365-941-A	PANEL BOARD, COMPLETE (A195)	
67	4-962-661-01	BUTTON (BAND)	
68	4-962-666-01	BUTTON (PROGRAM)	
* 69	1-650-509-11	CD LOWER BOARD	
* 70	1-650-511-11	SW BOARD	
71	X-4944-347-1	BUTTON (CDM) ASSY	
* 72	1-650-508-11	CD UPPER BOARD	
* 73	1-650-510-11	H.P. BOARD	
74	4-962-663-01	BUTTON (MD-A)	
75	4-962-664-01	BUTTON (MD-B)	
* 76	A-4365-787-A	MAIN TC BOARD, COMPLETE (A195, G2000)	
* 76	A-4365-909-A	MAIN TC BOARD, COMPLETE (D250)	
* 77	4-924-098-81	HOLDER, PC BOARD	
* 78	4-949-935-01	CUSHION (FL)	
* 79	4-955-792-01	HOLDER (5M), FL TUBE	
FL601	1-517-259-11	INDICATOR TUBE, FLUORESCENT	
⚠S1301	1-572-267-61	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	

6-3. TRAY SECTION



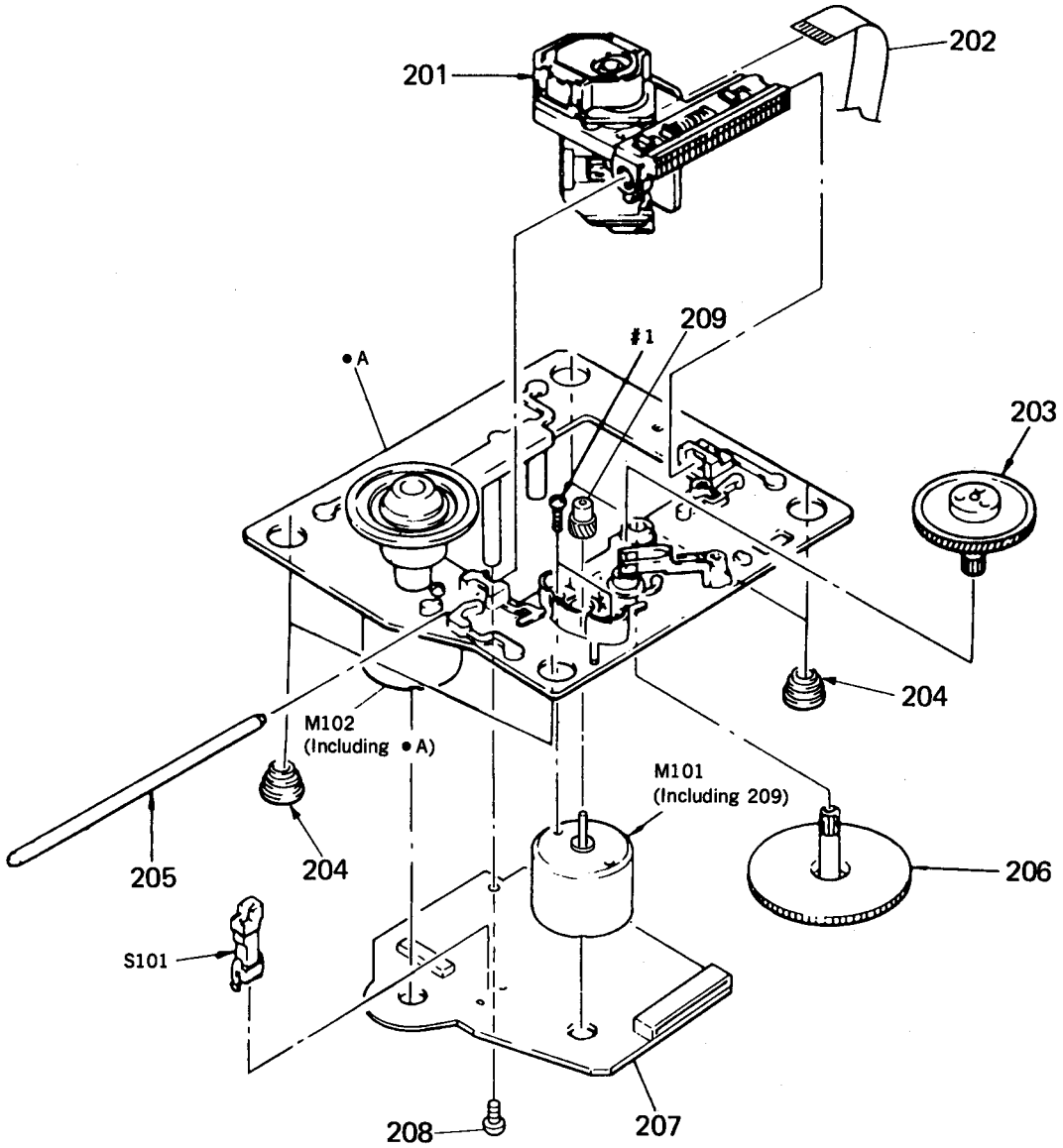
Ref. No.	Part No.	Description	Remark
* 101	4-949-226-01	PLATE, LOCK	
* 102	4-926-383-01	TABLE (B), DISC	
103	4-926-384-01	SCREW, STEP	
* 104	4-926-388-01	BRACKET (ADJUSTMENT)	
105	X-4924-457-1	ROLLER ASSY	
* 106	4-930-506-02	BRACKET (PRESS PULLEY)	
* 107	1-452-538-11	MAGNET	
108	4-926-399-01	BELT	
109	4-926-395-01	SPRING, COMPRESSION	
110	4-923-597-01	SCREW, STEP	
111	4-955-787-21	TABLE, DISC (G2000)	
111	4-955-787-41	TABLE, DISC (A195, D250)	
* 112	1-638-729-11	TABLE MOTOR BOARD	
113	4-934-376-01	SHAFT (ROLLER)	
D701	8-719-970-19	PHOTO SENSOR GP-1A521	
M701	A-4604-849-A	MOTOR ASSY, ROTARY	

6-4. CD CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
151	4-944-490-01	BELT (TIMING)	
152	X-4941-529-1	PULLEY ASSY	
* 153	4-951-619-01	CUSHION (A)	
154	4-924-412-01	SPRING (B), TENSION	
155	4-917-519-11	LEVER, SET	
156	4-934-391-01	GEAR (LOADING A)	
157	4-934-381-01	GEAR (LOADING C)	
158	1-765-195-11	WIRE (FLAT TYPE) (7 CORE)	
159	4-934-375-01	GEAR (LOADING B)	
* 160	4-943-996-06	SPRING, LEAF	
* 161	4-943-997-31	CHASSIS	
* 162	4-934-373-01	BRACKET (BU)	
163	4-937-911-01	SPRING, TENSION	
164	4-933-134-01	SCREW (+PTPWH M2.6X6)	
165	4-958-593-01	SPRING (BU), COMPRESSION	
* 166	A-4365-928-A	CD MAIN BOARD, COMPLETE	
167	1-537-645-11	JUMPER, FILM (WITH TERMINAL)	
* 168	1-638-731-11	OPEN/UP SW BOARD	
169	1-590-849-11	WIRE, FLAT TYPE (5 CORE)	
* 170	1-639-288-11	LOADING MOTOR BOARD	
M702	A-4604-847-A	MOTOR ASSY, LOADING	
S701	1-572-713-11	SWITCH, PUSH (WITH CONNECTOR) (DOWN)	

6-5. OPTICAL PICK-UP BLOCK SECTION (BU-5BD13)

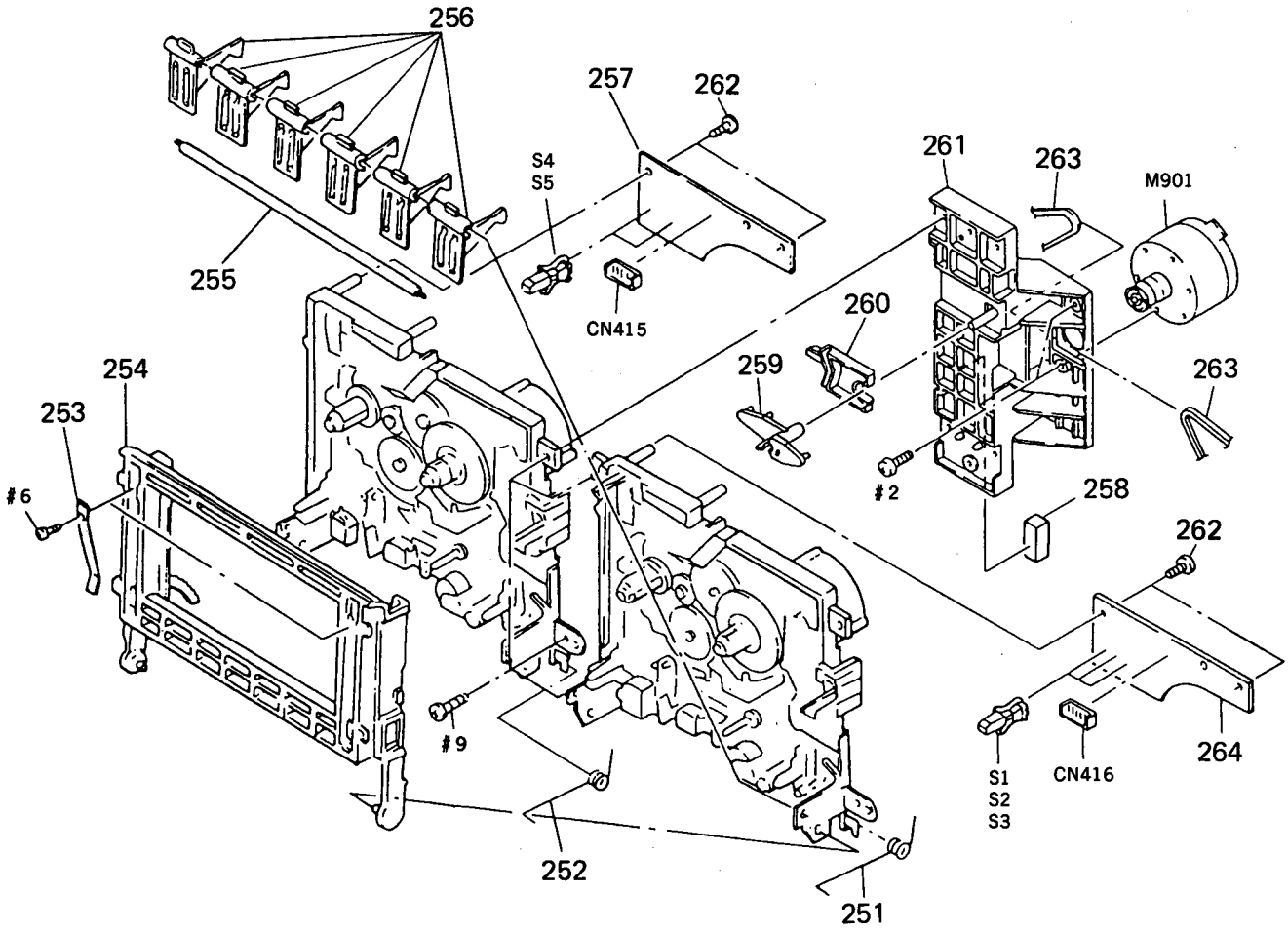


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠201	8-848-144-11	DEVICE, OPTICAL KSS-240A	
202	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
203	4-917-567-01	GEAR (M)	
204	4-951-940-01	INSULATOR (BU)	
205	4-917-565-01	SHAFT, SLED	
206	4-917-564-01	GEAR (P), FLATNESS	

Ref. No.	Part No.	Description	Remark
* 207	A-4673-064-A	BD BOARD, COMPLETE	
208	4-951-620-01	SCREW (2.6X8), +BVTP	
209	4-917-566-01	GEAR (S)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-4	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

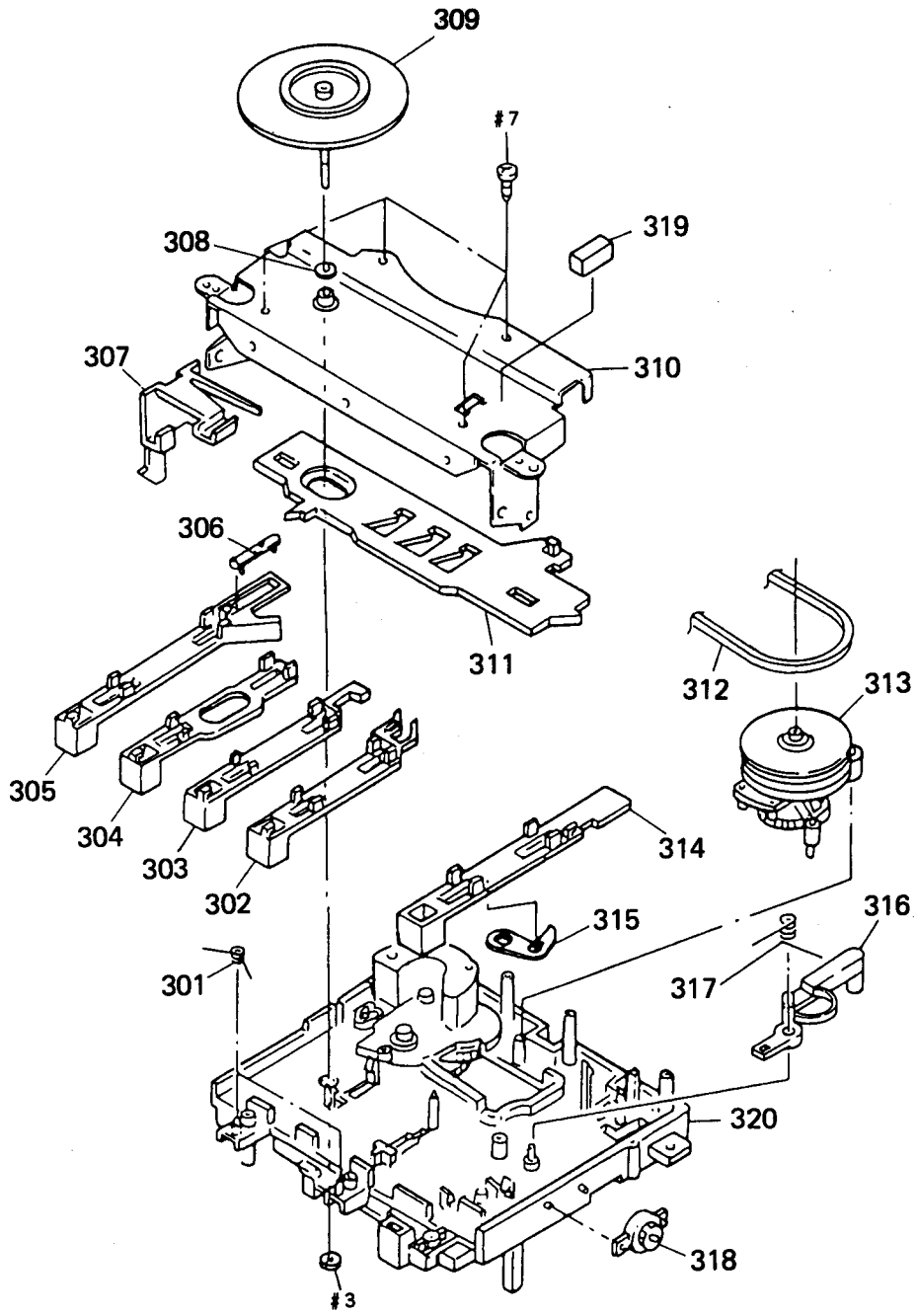
6-6. MECHANISM DECK SECTION 1 (TCM-180VW-H11)



Ref. No.	Part No.	Description	Remark
251	3-358-287-01	SPRING (LOADING A), TORSION	
252	3-358-229-01	SPRING (LOADING), TORSION	
253	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF	
254	3-358-266-02	HOLDER, CASSETTE	
255	3-371-917-01	SHAFT (BUTTON SHAFT 4)	
256	3-369-335-01	LEVER (BUTTON BASE F)	
* 257	1-640-702-11	LEAF SW (A) BOARD	
* 258	3-358-289-01	SPACER (VIBRATION PROOF MAT)	
259	3-358-203-01	LEVER (TRIGGER)	
260	3-358-202-01	SLIDER (TRIGGER)	
* 261	3-363-930-01	BRACKET (JOINT BASE)	

Ref. No.	Part No.	Description	Remark
262	4-951-620-01	SCREW (2.6X8), +BVTP	
263	3-364-777-01	BELT (WH)	
* 264	1-640-703-11	LEAF SW (B) BOARD	
* CN415	1-568-942-11	PIN, CONNECTOR 4P	
* CN416	1-568-943-11	PIN, CONNECTOR 5P	
M901	X-3362-377-1	MOTOR (WH) ASSY	
S1	1-571-736-11	SWITCH, LEAF (MOTOR) (DECK B)	
S2	1-571-736-11	SWITCH, LEAF (PLAY) (DECK B)	
S3	1-571-736-11	SWITCH, LEAF (REC) (DECK B)	
S4	1-571-736-11	SWITCH, LEAF (MOTOR) (DECK A)	
S5	1-571-736-11	SWITCH, LEAF (PLAY) (DECK A)	

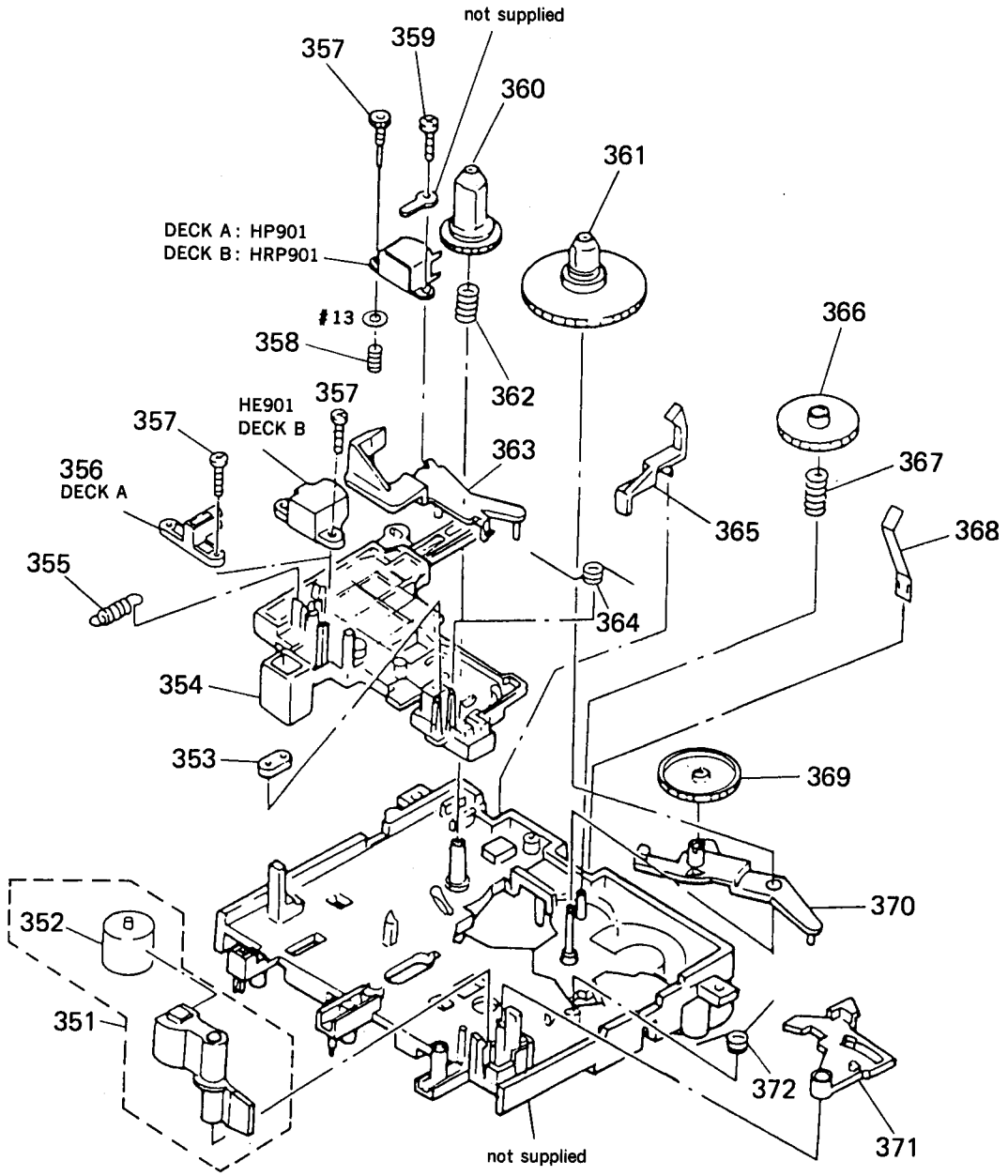
6-7. MECHANISM DECK SECTION 2 (TCM-180VW-H11)



Ref. No.	Part No.	Description	Remark
301	3-358-232-01	SPRING (S-P F-R), TORSION	
302	3-358-258-01	SLIDER (REW)	
303	3-358-257-01	SLIDER (FF)	
304	3-358-256-01	SLIDER (STOP/EJECT)	
305	3-358-260-01	SLIDER (PAUSE)	
* 306	3-358-226-01	LEVER (PAUSE LEVER)	
* 307	3-358-261-02	SLIDER (HOLDER LOCK)	
308	3-701-437-01	WASHER	
309	X-3358-205-1	FLYWHEEL (A) ASSY (DECK B)	
309	X-3366-859-1	FLYWHEEL (D) ASSY (DECK A)	
* 310	X-3358-208-1	BRACKET (B) ASSY	

Ref. No.	Part No.	Description	Remark
* 311	3-358-249-01	SLIDER (LOCK PLATE)	
312	3-358-230-01	BELT (A1)	
313	X-3358-202-1	LEVER (FR ARM) ASSY	
314	3-358-259-01	SLIDER (REC) (DECK B)	
* 315	3-358-204-01	LEVER (REC SAFETY) (DECK B)	
316	3-358-286-01	LEVER (MOTOR LEVER)	
317	3-358-214-01	SPRING (LOCK), TORSION (DECK A)	
317	3-358-233-01	SPRING (REC-LOCK), TORSION (DECK B)	
318	3-319-224-51	DAMPER, SMALL	
* 319	3-358-289-01	SPACER (VIBRATION PROOF MAT)	
320	X-3358-207-2	CHASSIS (A) ASSY	

6-8. MECHANISM DECK SECTION 3 (TCM-180VW-H11)



Ref. No.	Part No.	Description	Remark
351	X-3358-204-1	LEVER (PINCH LEVER) ASSY	
352	3-578-143-11	PINCH ROLLER	
* 353	3-358-215-01	BUSHING (WIRE KIT RETAINER)	
354	3-358-265-01	SLIDER (HEAD PC BOARD A)	
355	3-358-217-01	SPRING, TENSION	
* 356	3-363-931-01	GUIDE, TAPE (DECK A)	
357	3-358-288-11	SCREW (T), AZIMUTH	
358	3-358-234-01	SPRING (AZIMUTH), COMPRESSION	
359	3-358-288-01	SCREW (T), AZIMUTH	
360	3-358-248-01	GEAR (SUPPLY REEL)	
361	X-3358-203-1	TABLE (T) ASSY, REEL	
362	3-358-208-01	SPRING (SUPPLY), COMPRESSION	
* 363	3-358-251-01	LEVER (TENSION DETECTION ARM)	

Ref. No.	Part No.	Description	Remark
364	3-358-228-01	SPRING, TORSION	
* 365	3-358-255-01	LEVER (GB LEVER) (DECK B)	
* 366	3-358-224-01	GEAR (FF GEAR)	
367	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
368	3-358-227-01	SPRING, LEAF	
* 369	3-358-284-01	GEAR (TU GEAR)	
* 370	3-358-252-01	LEVER (TU ARM)	
* 371	3-358-253-01	LEVER (SHUT-OFF LEVER)	
372	3-358-243-01	SPRING (TU-SHUT), TORSION	
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE) (DECK B)	
HP901	1-543-319-11	HEAD, MAGNETIC (PB) (DECK A)	
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PB) (DECK B)	

BD

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
*	A-4673-064-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C131	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C132	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C133	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C177	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C178	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C179	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C181	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C183	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V
C184	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V
C185	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V
C186	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C188	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C191	1-163-091-00	CERAMIC CHIP	8PF		50V
C192	1-163-091-00	CERAMIC CHIP	8PF		50V
C193	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C194	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C195	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C196	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C197	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN101	1-580-875-11	SOCKET, CONNECTOR (SMT) 26P			
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P			
		< IC >			
IC101	8-752-367-16	IC CXD2515Q			
IC102	8-759-176-09	IC BA6392FP			
IC103	8-752-360-60	IC CXD2565M-1			
		< COIL >			
L101	1-414-234-11	INDUCTOR, FERRITE BEAD			
L102	1-414-234-11	INDUCTOR, FERRITE BEAD			
L103	1-414-234-11	INDUCTOR, FERRITE BEAD			
L104	1-216-001-00	METAL CHIP	10	5%	1/10W
L106	1-414-234-11	INDUCTOR, FERRITE BEAD			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R109	1-216-121-00	METAL CHIP	1M	5%	1/10W
R124	1-216-097-00	METAL CHIP	100K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R181	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R182	1-216-080-00	METAL CHIP	20K	5%	1/10W
R183	1-216-080-00	METAL CHIP	20K	5%	1/10W
R184	1-216-080-00	METAL CHIP	20K	5%	1/10W
R185	1-216-080-00	METAL CHIP	20K	5%	1/10W
R187	1-216-035-00	METAL CHIP	270	5%	1/10W
R188	1-216-121-00	METAL CHIP	1M	5%	1/10W
R189	1-414-234-11	INDUCTOR, FERRITE BEAD			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
		< VIBRATOR >			
X101	1-579-904-11	VIBRATOR, CRYSTAL (33.8MHz)			
*	1-650-509-11	CD LOWER BOARD			
		**********			
		< CONNECTOR >			
CN201	1-691-644-11	SOCKET, CONNECTOR 7P			
		< RESISTOR >			
R201	1-249-418-11	CARBON	1.2K	5% 1/4W	
R202	1-247-836-11	CARBON	1.6K	5% 1/4W	
R203	1-249-421-11	CARBON	2.2K	5% 1/4W	
R204	1-249-423-11	CARBON	3.3K	5% 1/4W	
R205	1-249-426-11	CARBON	5.6K	5% 1/4W	
R206	1-247-856-00	CARBON	11K	5% 1/4W	
R207	1-249-418-11	CARBON	1.2K	5% 1/4W	
R208	1-247-836-11	CARBON	1.6K	5% 1/4W	
		< SWITCH >			
S201	1-554-303-21	SWITCH, TACTILE (PROGRAM (PLAY MODE))			
S202	1-554-303-21	SWITCH, TACTILE (SHUFFLE (PLAY MODE))			
S203	1-554-303-21	SWITCH, TACTILE (CONTINUE (PLAY MODE))			
S204	1-554-303-21	SWITCH, TACTILE (EDIT)			
S205	1-554-303-21	SWITCH, TACTILE (CLEAR)			
S206	1-554-303-21	SWITCH, TACTILE (CHECK)			
S207	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)			
S208	1-554-303-21	SWITCH, TACTILE (REPEAT)			
S209	1-554-303-21	SWITCH, TACTILE (TIME)			

Ref. No.	Part No.	Description			Remark
*	A-4365-928-A	CD MAIN BOARD, COMPLETE			
		**********			
	4-875-327-41	HEAT SINK			
	7-682-547-09	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C306	1-126-059-11	ELECT	10uF	20% 50V	
C307	1-126-163-11	ELECT	4.7uF	20% 50V	
C308	1-124-472-11	ELECT	470uF	20% 10V	
C309	1-124-473-11	ELECT	1000uF	20% 10V	
C311	1-126-300-11	ELECT	0.47uF	20% 50V	
C312	1-124-472-11	ELECT	470uF	20% 10V	
C314	1-126-059-11	ELECT	10uF	20% 50V	
C315	1-126-163-11	ELECT	4.7uF	20% 50V	
C317	1-126-022-11	ELECT	47uF	20% 16V	
C318	1-164-159-11	CERAMIC	0.1uF	50V	
C320	1-161-494-00	CERAMIC	0.022uF	25V	
C321	1-126-022-11	ELECT	47uF	20% 16V	
C322	1-161-494-00	CERAMIC	0.022uF	25V	
C323	1-164-159-11	CERAMIC	0.1uF	50V	
C341	1-126-376-11	ELECT	470uF	20% 25V	
C362	1-164-159-11	CERAMIC	0.1uF	50V	
C364	1-164-159-11	CERAMIC	0.1uF	50V	
C366	1-162-282-31	CERAMIC	100PF	10% 50V	
C371	1-162-284-31	CERAMIC	150PF	10% 50V	
C372	1-162-284-31	CERAMIC	150PF	10% 50V	
C373	1-162-284-31	CERAMIC	150PF	10% 50V	
C374	1-162-284-31	CERAMIC	150PF	10% 50V	
C375	1-130-479-00	MYLAR	0.0047uF	5% 50V	
C376	1-130-479-00	MYLAR	0.0047uF	5% 50V	
C377	1-130-472-00	MYLAR	0.0012uF	5% 50V	
C378	1-130-472-00	MYLAR	0.0012uF	5% 50V	
C379	1-124-443-00	ELECT	100uF	20% 10V	
C380	1-124-443-00	ELECT	100uF	20% 10V	
C381	1-162-291-31	CERAMIC	560PF	10% 50V	
C382	1-162-291-31	CERAMIC	560PF	10% 50V	
		< CONNECTOR >			
CN301	1-750-585-11	CONNECTOR, FFC/FPC 7P			
* CN303	1-568-943-11	PIN, CONNECTOR 5P			
CN305	1-750-997-11	CONNECTOR, FFC/FPC 5P			
CN306	1-764-415-11	CONNECTOR, FFC/FPC 26P			
* CN309	1-568-836-11	SOCKET, CONNECTOR 17P			
		< DIODE >			
D321	8-719-987-63	DIODE 1N4148M			
D341	8-719-010-42	DIODE UZ-5.6BSB			

CD MAIN | CD UPPER

Ref. No.	Part No.	Description			Remark
		< IC >			
IC302	8-759-061-65	IC LA5602			
IC304	8-759-805-37	IC L78LR05D-MA			
IC305	8-759-605-00	IC M5F78M07L			
IC321	8-752-854-58	IC CXP82316-038Q			
IC341	8-759-172-31	IC BA6191			
IC371	8-759-145-58	IC uPC4558C			
IC372	8-759-145-58	IC uPC4558C			
		< DIODE >			
JW304	8-719-200-82	DIODE 11ES2			
JW317	8-719-200-82	DIODE 11ES2			
JW427	8-719-987-63	DIODE 1N4148M			
JW428	8-719-987-63	DIODE 1N4148M			
		< TRANSISTOR >			
Q302	8-729-900-65	TRANSISTOR DTA144ES			
Q303	8-729-900-89	TRANSISTOR DTC144ES			
Q322	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q341	8-729-900-89	TRANSISTOR DTC144ES			
Q352	8-729-900-65	TRANSISTOR DTA144ES			
Q353	8-729-900-65	TRANSISTOR DTA144ES			
		< RESISTOR >			
R308	1-260-064-11	CARBON	1	5%	1/2W
R313	1-249-417-11	CARBON	1K	5%	1/4W
R321	1-249-429-11	CARBON	10K	5%	1/4W
R322	1-249-429-11	CARBON	10K	5%	1/4W
R323	1-249-417-11	CARBON	1K	5%	1/4W
R324	1-249-428-11	CARBON	8.2K	5%	1/4W
R325	1-249-428-11	CARBON	8.2K	5%	1/4W
R326	1-249-428-11	CARBON	8.2K	5%	1/4W
R327	1-249-428-11	CARBON	8.2K	5%	1/4W
R328	1-249-428-11	CARBON	8.2K	5%	1/4W
R329	1-249-428-11	CARBON	8.2K	5%	1/4W
R333	1-249-417-11	CARBON	1K	5%	1/4W
R334	1-249-425-11	CARBON	4.7K	5%	1/4W
R335	1-249-429-11	CARBON	10K	5%	1/4W
R336	1-249-429-11	CARBON	10K	5%	1/4W
R338	1-249-425-11	CARBON	4.7K	5%	1/4W
R339	1-249-425-11	CARBON	4.7K	5%	1/4W
R340	1-249-425-11	CARBON	4.7K	5%	1/4W
R341	1-247-876-11	CARBON	75K	5%	1/4W
R342	1-247-876-11	CARBON	75K	5%	1/4W
R343	1-247-876-11	CARBON	75K	5%	1/4W
R344	1-247-876-11	CARBON	75K	5%	1/4W
R345	1-249-423-11	CARBON	3.3K	5%	1/4W
R346	1-249-424-11	CARBON	3.9K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R347	1-249-415-11	CARBON	680	5%	1/4W
R348	1-247-834-11	CARBON	1.3K	5%	1/4W
R349	1-249-428-11	CARBON	8.2K	5%	1/4W
R350	1-247-862-11	CARBON	20K	5%	1/4W
R359	1-249-417-11	CARBON	1K	5%	1/4W
R360	1-249-417-11	CARBON	1K	5%	1/4W
R361	1-249-429-11	CARBON	10K	5%	1/4W
R363	1-249-417-11	CARBON	1K	5%	1/4W
R365	1-249-417-11	CARBON	1K	5%	1/4W
R366	1-249-417-11	CARBON	1K	5%	1/4W
R367	1-249-417-11	CARBON	1K	5%	1/4W
R368	1-249-417-11	CARBON	1K	5%	1/4W
R371	1-247-852-11	CARBON	7.5K	5%	1/4W
R372	1-247-852-11	CARBON	7.5K	5%	1/4W
R373	1-247-852-11	CARBON	7.5K	5%	1/4W
R374	1-247-852-11	CARBON	7.5K	5%	1/4W
R375	1-249-431-11	CARBON	15K	5%	1/4W
R376	1-249-431-11	CARBON	15K	5%	1/4W
R377	1-249-431-11	CARBON	15K	5%	1/4W
R378	1-249-431-11	CARBON	15K	5%	1/4W
R379	1-249-419-11	CARBON	1.5K	5%	1/4W
R380	1-249-419-11	CARBON	1.5K	5%	1/4W
R381	1-249-419-11	CARBON	1.5K	5%	1/4W
R382	1-249-419-11	CARBON	1.5K	5%	1/4W
R383	1-249-441-11	CARBON	100K	5%	1/4W
R384	1-249-441-11	CARBON	100K	5%	1/4W
R385	1-249-421-11	CARBON	2.2K	5%	1/4W
R386	1-249-421-11	CARBON	2.2K	5%	1/4W
R389	1-247-807-31	CARBON	100	5%	1/4W
R390	1-247-807-31	CARBON	100	5%	1/4W
		< VIBRATOR >			
X321	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			

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* 1-650-508-11 CD UPPER BOARD

****

		< DIODE >			
D201	8-719-313-72	LED SEL3810A-CD (II)			
D202	8-719-313-66	LED SEL3410E-TH12 (▷)			
		< RESISTOR >			
R209	1-249-421-11	CARBON	2.2K	5%	1/4W
R210	1-249-423-11	CARBON	3.3K	5%	1/4W
R211	1-249-426-11	CARBON	5.6K	5%	1/4W
R212	1-247-856-00	CARBON	11K	5%	1/4W
R213	1-249-418-11	CARBON	1.2K	5%	1/4W
R214	1-247-836-11	CARBON	1.6K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R215	1-249-421-11	CARBON	2.2K	5%	1/4W
R216	1-249-423-11	CARBON	3.3K	5%	1/4W
R217	1-249-426-11	CARBON	5.6K	5%	1/4W
R218	1-247-856-00	CARBON	11K	5%	1/4W
R219	1-249-411-11	CARBON	330	5%	1/4W
R220	1-249-410-11	CARBON	270	5%	1/4W
		< SWITCH >			
S210	1-554-303-21	SWITCH, TACTILE (1 (DISC SELECT))			
S211	1-554-303-21	SWITCH, TACTILE (2 (DISC SELECT))			
S212	1-554-303-21	SWITCH, TACTILE (3 (DISC SELECT))			
S213	1-554-303-21	SWITCH, TACTILE (4 (DISC SELECT))			
S214	1-554-303-21	SWITCH, TACTILE (5 (DISC SELECT))			
S215	1-554-303-21	SWITCH, TACTILE (⏮ ◀◀ (AMS))			
S216	1-554-303-21	SWITCH, TACTILE (▶▶ ⏭ (AMS))			
S217	1-554-303-21	SWITCH, TACTILE (▷)			
S218	1-554-303-21	SWITCH, TACTILE (❚❚)			
S219	1-554-303-21	SWITCH, TACTILE (■)			
S220	1-554-303-21	SWITCH, TACTILE (DISC SKIP)			
S221	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
**********					
*	1-650-510-11	H.P. BOARD			
		**********			
		< JACK >			
CNJ1201	1-569-113-11	JACK, LARGE TYPE (HEADPHONES)			
**********					
*	1-640-702-11	LEAF SW (A) BOARD			
		**********			
		< CAPACITOR >			
C544	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN415	1-568-942-11	PIN, CONNECTOR 4P			
		< SWITCH >			
S4	1-571-736-11	SWITCH, LEAF (MOTOR)			
S5	1-571-736-11	SWITCH, LEAF (PLAY)			
**********					

Ref. No.	Part No.	Description			Remark
*	1-640-703-11	LEAF SW (B) BOARD			
		**********			
		< CAPACITOR >			
C545	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN416	1-568-943-11	PIN, CONNECTOR 5P			
		< SWITCH >			
S1	1-571-736-11	SWITCH, LEAF (MOTOR)			
S2	1-571-736-11	SWITCH, LEAF (PLAY)			
S3	1-571-736-11	SWITCH, LEAF (REC)			
**********					
*	1-639-288-11	LOADING MOTOR BOARD			
		**********			
		< CAPACITOR >			
C705	1-161-375-00	CERAMIC	0.0022uF	20%	50V
**********					
*	A-4365-921-A	MAIN BOARD, COMPLETE (A195, D250)			
*	A-4365-939-A	MAIN BOARD, COMPLETE (G2000)			
		**********			
		< CAPACITOR >			
C1	1-161-379-00	CERAMIC	0.01uF	20%	25V
C2	1-124-477-11	ELECT	47uF	20%	25V
C3	1-161-379-00	CERAMIC	0.01uF	20%	25V
C4	1-161-379-00	CERAMIC	0.01uF	20%	25V
C5	1-164-159-11	CERAMIC	0.1uF		50V
C6	1-161-379-00	CERAMIC	0.01uF	20%	25V
C7	1-124-477-11	ELECT	47uF	20%	25V
C8	1-161-379-00	CERAMIC	0.01uF	20%	25V
C9	1-161-379-00	CERAMIC	0.01uF	20%	25V
C10	1-161-379-00	CERAMIC	0.01uF	20%	25V
C11	1-124-907-11	ELECT	10uF	20%	50V
C12	1-124-902-00	ELECT	0.47uF	20%	50V
C13	1-124-903-11	ELECT	1uF	20%	50V
C14	1-124-903-11	ELECT	1uF	20%	50V
C15	1-124-907-11	ELECT	10uF	20%	50V
C16	1-124-907-11	ELECT	10uF	20%	50V
C17	1-124-907-11	ELECT	10uF	20%	50V
C18	1-124-907-11	ELECT	10uF	20%	50V
C19	1-136-160-00	FILM	0.039uF	5%	50V
C20	1-136-160-00	FILM	0.039uF	5%	50V
C21	1-161-046-00	CERAMIC	0.0039uF	10%	25V

MAIN

Ref. No.	Part No.	Description			Remark
C22	1-161-046-00	CERAMIC	0.0039uF	10%	25V
C23	1-124-903-11	ELECT	1uF	20%	50V
C24	1-162-294-31	CERAMIC	0.001uF	10%	50V
C25	1-161-327-00	CERAMIC	0.0033uF	30%	16V
C26	1-124-477-11	ELECT	47uF	20%	25V
C27	1-126-962-11	ELECT	3.3uF	20%	50V
C28	1-161-494-00	CERAMIC	0.022uF		25V
C29	1-124-907-11	ELECT	10uF	20%	50V
C30	1-161-494-00	CERAMIC	0.022uF		25V
C31	1-101-005-00	CERAMIC	22000PF		50V
C32	1-162-198-31	CERAMIC	8.2PF	10%	50V
C33	1-161-379-00	CERAMIC	0.01uF	20%	25V
C45	1-161-379-00	CERAMIC	0.01uF	20%	25V
C51	1-102-961-00	CERAMIC	27PF	5%	50V
C52	1-102-961-00	CERAMIC	27PF	5%	50V
C53	1-124-477-11	ELECT	47uF	20%	25V
C54	1-161-379-00	CERAMIC	0.01uF	20%	25V
C55	1-161-379-00	CERAMIC	0.01uF	20%	25V
C56	1-161-379-00	CERAMIC	0.01uF	20%	25V
C57	1-161-379-00	CERAMIC	0.01uF	20%	25V
C58	1-161-379-00	CERAMIC	0.01uF	20%	25V
C61	1-124-925-11	ELECT	2.2uF	20%	100V
C62	1-124-463-00	ELECT	0.1uF	20%	50V
C63	1-161-379-00	CERAMIC	0.01uF	20%	25V
C64	1-161-379-00	CERAMIC	0.01uF	20%	25V
C65	1-124-477-11	ELECT	47uF	20%	25V
C67	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1001	1-124-257-00	ELECT	2.2uF	20%	50V
C1002	1-162-282-31	CERAMIC (A195, D250)	100PF	10%	50V
C1003	1-162-282-31	CERAMIC (A195, D250)	100PF	10%	50V
C1004	1-124-477-11	ELECT (A195, D250)	47uF	20%	25V
C1005	1-161-377-00	CERAMIC (A195, D250)	0.0047uF	20%	16V
C1006	1-161-374-11	CERAMIC (A195, D250)	0.0015uF	20%	50V
C1007	1-124-464-11	ELECT (A195, D250)	0.22uF	20%	50V
C1010	1-124-477-11	ELECT	47uF	20%	25V
C1051	1-124-257-00	ELECT	2.2uF	20%	50V
C1052	1-162-282-31	CERAMIC (A195, D250)	100PF	10%	50V
C1053	1-162-282-31	CERAMIC (A195, D250)	100PF	10%	50V
C1054	1-124-477-11	ELECT (A195, D250)	47uF	20%	25V
C1055	1-161-377-00	CERAMIC (A195, D250)	0.0047uF	20%	16V
C1056	1-161-374-11	CERAMIC (A195, D250)	0.0015uF	20%	50V
C1057	1-124-464-11	ELECT (A195, D250)	0.22uF	20%	50V
C1060	1-124-477-11	ELECT	47uF	20%	25V
C1215	1-162-282-31	CERAMIC	100PF	10%	50V
C1216	1-162-195-31	CERAMIC	4.7PF	10%	50V
C1217	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1218	1-124-472-11	ELECT	470uF	20%	10V
C1232	1-126-233-11	ELECT	22uF	20%	50V
C1234	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1265	1-162-282-31	CERAMIC	100PF	10%	50V
C1266	1-162-195-31	CERAMIC	4.7PF	10%	50V
C1267	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1268	1-124-119-00	ELECT	330uF	20%	16V
C1306	1-124-477-11	ELECT	47uF	20%	25V
C1308	1-126-101-11	ELECT	100uF	20%	16V
C1309	1-126-101-11	ELECT	100uF	20%	16V
C1312	1-124-563-11	ELECT	2200uF	20%	25V
C1313	1-126-946-11	ELECT	6800uF	20%	25V
C1314	1-124-122-11	ELECT	100uF	20%	50V
C1315	1-124-927-11	ELECT	4.7uF	20%	100V
C1316	1-124-910-11	ELECT	47uF	20%	50V
C1319	1-124-463-00	ELECT	0.1uF	20%	50V
C1320	1-124-907-11	ELECT	10uF	20%	50V
C1321	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1322	1-161-379-00	CERAMIC	0.01uF	20%	25V
C1324	1-124-907-11	ELECT	10uF	20%	50V
C1326	1-124-907-11	ELECT	10uF	20%	50V
C1330	1-126-101-11	ELECT	100uF	20%	16V
C1331	1-102-394-11	CERAMIC	0.01uF		250V
C1340	1-124-480-11	ELECT	470uF	20%	25V
C1341	1-124-907-11	ELECT	10uF	20%	50V
C1351	1-124-910-11	ELECT	47uF	20%	50V
C1352	1-126-105-11	ELECT	1000uF	20%	35V
C1361	1-124-910-11	ELECT	47uF	20%	50V

< FILTER >

CF1	1-567-389-11	FILTER, CERAMIC
CF2	1-567-389-11	FILTER, CERAMIC
CF4	1-527-981-00	FILTER, CERAMIC
CF5	1-577-075-11	OSCILLATOR, CERAMIC
CF6	1-760-220-11	FILTER, CERAMIC

< CONNECTOR >

* CN1	1-568-830-11	SOCKET, CONNECTOR 11P
* CN1201	1-537-327-11	TERMINAL BOARD (SPEAKER)
* CN1202	1-564-506-11	PLUG, CONNECTOR 3P
CN1203	1-564-506-11	PLUG, CONNECTOR 3P
CN1204	1-564-510-11	PLUG, CONNECTOR 7P

Ref. No.	Part No.	Description	Remark
* CN1205	1-564-509-11	PLUG, CONNECTOR 6P	
CN1206	1-568-838-11	SOCKET, CONNECTOR 21P	
* CN1208	1-568-836-11	SOCKET, CONNECTOR 17P	
CN1301	1-564-511-11	PLUG, CONNECTOR 8P	
		< DIODE >	
D1	8-719-987-63	DIODE 1N4148M	
D1201	8-719-987-63	DIODE 1N4148M	
D1301	8-719-312-09	DIODE RBA-402	
D1302	8-719-200-82	DIODE 11ES2	
D1303	8-719-200-82	DIODE 11ES2	
D1304	8-719-200-82	DIODE 11ES2	
D1305	8-719-200-82	DIODE 11ES2	
D1306	8-719-001-42	DIODE UZL-11M1	
D1307	8-719-200-82	DIODE 11ES2	
D1308	8-719-002-60	DIODE UZL-33L	
D1309	8-719-014-66	DIODE UZP-5.6B	
D1310	8-719-987-63	DIODE 1N4148M	
D1317	8-719-200-82	DIODE 11ES2	
D1318	8-719-200-82	DIODE 11ES2	
D1319	8-719-200-82	DIODE 11ES2	
D1320	8-719-200-82	DIODE 11ES2	
D1321	8-719-200-82	DIODE 11ES2	
D1322	8-719-200-82	DIODE 11ES2	
D1323	8-719-200-82	DIODE 11ES2	
D1324	8-719-200-82	DIODE 11ES2	
D1325	8-719-200-82	DIODE 11ES2	
D1326	8-719-200-82	DIODE 11ES2	
D1327	8-719-200-82	DIODE 11ES2	
D1328	8-719-200-82	DIODE 11ES2	
D1329	8-719-200-82	DIODE 11ES2	
D1330	8-719-200-82	DIODE 11ES2	
D1385	8-719-200-82	DIODE 11ES2	
		< FRONT END >	
FE1	1-465-673-11	FRONT END (2 BAND)	
FE2	1-239-634-11	ENCAPSULATED COMPONENT, AM. RF	
		< IC >	
IC1	8-759-176-03	IC LA1835	
IC51	8-759-175-87	IC LC7218-ST	
IC1001	8-759-634-51	IC M5218AP (A195, D250)	
IC1002	8-759-000-48	IC MC14052BCP	
IC1003	8-759-634-51	IC M5218AP	
IC1202	8-759-634-51	IC M5218AP	
IC1303	8-759-605-00	IC M5F78M07L	
IC1304	8-759-604-95	IC M5F79M07L	
IC1305	8-759-820-13	IC L78MR06	

Ref. No.	Part No.	Description	Remark
		< IFT >	
IFT1	1-409-636-11	TRANSFORMER, IF (CERAMIC FILTER)	
		< JACK >	
* J1001	1-580-691-11	JACK, PIN 2P (PHONO (IN))	(A195, D250)
* J1001	1-580-691-11	JACK, PIN 2P (VIDEO (IN))	(G2000)
		< COIL >	
L1	1-410-688-31	INDUCTOR 1.5mH	
		< FILTER >	
LPF1	1-239-597-11	FILTER, LOW PASS	
LPF2	1-239-597-11	FILTER, LOW PASS	
		< TRANSISTOR >	
Q1	8-729-230-99	TRANSISTOR 2SC2669-OY	
Q55	8-729-900-61	TRANSISTOR DTA114ES	
Q61	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q62	8-729-201-84	TRANSISTOR 2SC3112-B	
Q1001	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1051	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1301	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q1302	8-729-209-15	TRANSISTOR 2SD2012	
		< RESISTOR >	
R1	1-249-411-11	CARBON 330 5% 1/4W	
R2	1-249-411-11	CARBON 330 5% 1/4W	
R3	1-249-409-11	CARBON 220 5% 1/4W	
⚠R4	1-249-402-11	CARBON 56 5% 1/4W	F
R5	1-247-891-00	CARBON 330K 5% 1/4W	
R6	1-249-411-11	CARBON 330 5% 1/4W	
⚠R9	1-247-807-31	CARBON 100 5% 1/4W	F
R10	1-249-437-11	CARBON 47K 5% 1/4W	
R12	1-249-429-11	CARBON 10K 5% 1/4W	
R13	1-249-442-11	CARBON 510 5% 1/4W	
⚠R14	1-249-403-11	CARBON 68 5% 1/4W	F
R16	1-249-429-11	CARBON 10K 5% 1/4W	
R17	1-247-842-11	CARBON 3K 5% 1/4W	
R18	1-249-429-11	CARBON 10K 5% 1/4W	
R19	1-249-441-11	CARBON 100K 5% 1/4W	
R20	1-249-435-11	CARBON 33K 5% 1/4W	
R21	1-249-441-11	CARBON 100K 5% 1/4W	
R22	1-249-437-11	CARBON 47K 5% 1/4W	
R23	1-249-399-11	CARBON 33 5% 1/4W	
R35	1-249-423-11	CARBON 3.3K 5% 1/4W	
R36	1-249-423-11	CARBON 3.3K 5% 1/4W	
R45	1-249-426-11	CARBON 5.6K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MAIN MAIN TC

Ref. No.	Part No.	Description				Remark
R46	1-249-426-11	CARBON	5.6K	5%	1/4W	
R48	1-249-423-11	CARBON	3.3K	5%	1/4W	
R49	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R50	1-249-401-11	CARBON	47	5%	1/4W	F
R51	1-249-417-11	CARBON	1K	5%	1/4W	
R52	1-249-417-11	CARBON	1K	5%	1/4W	
R53	1-249-417-11	CARBON	1K	5%	1/4W	
R54	1-249-417-11	CARBON	1K	5%	1/4W	
R56	1-249-425-11	CARBON	4.7K	5%	1/4W	
R57	1-249-417-11	CARBON	1K	5%	1/4W	
R58	1-249-417-11	CARBON	1K	5%	1/4W	
⚠R60	1-247-807-31	CARBON	100	5%	1/4W	F
R61	1-249-423-11	CARBON	3.3K	5%	1/4W	
R62	1-249-425-11	CARBON	4.7K	5%	1/4W	
R63	1-249-414-11	CARBON	560	5%	1/4W	
R64	1-249-417-11	CARBON	1K	5%	1/4W	
R65	1-249-410-11	CARBON	270	5%	1/4W	
R66	1-249-421-11	CARBON	2.2K	5%	1/4W	
R67	1-249-425-11	CARBON	4.7K	5%	1/4W	
R68	1-249-425-11	CARBON	4.7K	5%	1/4W	
R69	1-247-807-31	CARBON	100	5%	1/4W	
R1001	1-249-417-11	CARBON	1K	5%	1/4W	
R1002	1-249-437-11	CARBON (A195, D250)	47K	5%	1/4W	
R1003	1-249-416-11	CARBON (A195, D250)	820	5%	1/4W	
R1004	1-247-897-11	CARBON (A195, D250)	560K	5%	1/4W	
R1005	1-249-437-11	CARBON (A195, D250)	47K	5%	1/4W	
R1006	1-249-409-11	CARBON (A195, D250)	220	5%	1/4W	
R1007	1-249-441-11	CARBON	100K	5%	1/4W	
R1010	1-249-417-11	CARBON	1K	5%	1/4W	
R1016	1-249-437-11	CARBON	47K	5%	1/4W	
R1017	1-249-437-11	CARBON	47K	5%	1/4W	
R1021	1-249-434-11	CARBON	27K	5%	1/4W	
R1023	1-249-434-11	CARBON	27K	5%	1/4W	
R1034	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1035	1-249-433-11	CARBON	22K	5%	1/4W	
R1036	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1037	1-249-437-11	CARBON	47K	5%	1/4W	
R1051	1-249-417-11	CARBON	1K	5%	1/4W	
R1052	1-249-437-11	CARBON (A195, D250)	47K	5%	1/4W	
R1053	1-249-416-11	CARBON (A195, D250)	820	5%	1/4W	
R1054	1-247-897-11	CARBON (A195, D250)	560K	5%	1/4W	
R1055	1-249-437-11	CARBON (A195, D250)	47K	5%	1/4W	
R1056	1-249-409-11	CARBON (A195, D250)	220	5%	1/4W	
R1057	1-249-441-11	CARBON	100K	5%	1/4W	
R1060	1-249-417-11	CARBON	1K	5%	1/4W	
R1071	1-249-434-11	CARBON	27K	5%	1/4W	
R1073	1-249-434-11	CARBON	27K	5%	1/4W	
R1085	1-249-433-11	CARBON	22K	5%	1/4W	
R1087	1-249-437-11	CARBON	47K	5%	1/4W	
R1210	1-249-433-11	CARBON	22K	5%	1/4W	
R1211	1-247-901-11	CARBON	820K	5%	1/4W	
R1212	1-249-399-11	CARBON	33	5%	1/4W	
R1214	1-249-429-11	CARBON	10K	5%	1/4W	
R1260	1-249-433-11	CARBON	22K	5%	1/4W	
R1261	1-247-901-11	CARBON	820K	5%	1/4W	
R1262	1-249-399-11	CARBON	33	5%	1/4W	
R1263	1-247-807-31	CARBON	100	5%	1/4W	
R1303	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1304	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1321	1-249-417-11	CARBON	1K	5%	1/4W	
R1322	1-249-429-11	CARBON	10K	5%	1/4W	
R1345	1-249-422-11	CARBON	2.7K	5%	1/4W	

< VARIABLE RESISTOR >

RV1	1-238-601-11	RES, ADJ, CARBON 22K
RV2	1-238-600-11	RES, ADJ, CARBON 10K

< TERMINAL >

* TM1	1-537-264-11	TERMINAL BOARD (ANTENNA)

< VIBRATOR >

XT51	1-577-126-21	VIBRATOR, CRYSTAL (7.2MHz)

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*	A-4365-787-A	MAIN TC BOARD, COMPLETE (A195, G2000)
*	A-4365-909-A	MAIN TC BOARD, COMPLETE (A250)

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*	4-942-204-01	PLATE, GROUND

< CAPACITOR >

C700	1-162-282-31	CERAMIC	100PF	10%	50V
C701	1-162-290-31	CERAMIC	470PF	10%	50V
C702	1-137-372-11	FILM	0.022uF	5%	50V
C703	1-124-907-11	ELECT	10uF	20%	50V
C704	1-162-292-31	CERAMIC	680PF	10%	50V
C710	1-162-282-31	CERAMIC	100PF	10%	50V
C711	1-162-289-31	CERAMIC	390PF	10%	50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C712	1-137-372-11	FILM	0.022uF	5%	50V
C713	1-124-907-11	ELECT	10uF	20%	50V
C715	1-124-443-00	ELECT	100uF	20%	10V
C721	1-137-368-11	FILM	0.0047uF	5%	50V
C722	1-124-903-11	ELECT	1uF	20%	50V
C723	1-124-927-11	ELECT	4.7uF	20%	100V
C724	1-137-399-11	FILM	0.1uF	5%	50V
C725	1-124-907-11	ELECT	10uF	20%	50V
C726	1-124-903-11	ELECT	1uF	20%	50V
C727	1-124-902-00	ELECT	0.47uF	20%	50V
C728	1-124-927-11	ELECT	4.7uF	20%	100V
C729	1-162-291-31	CERAMIC	560PF	10%	50V
C730	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C731	1-164-056-11	CERAMIC	27PF	5%	50V
C732	1-101-890-00	CERAMIC	75PF	5%	50V
C733	1-162-288-31	CERAMIC	330PF	10%	50V
C734	1-164-066-11	CERAMIC	68PF	5%	50V
C800	1-162-282-31	CERAMIC	100PF	10%	50V
C801	1-162-290-31	CERAMIC	470PF	10%	50V
C802	1-137-372-11	FILM	0.022uF	5%	50V
C803	1-124-907-11	ELECT	10uF	20%	50V
C804	1-162-292-31	CERAMIC	680PF	10%	50V
C810	1-162-282-31	CERAMIC	100PF	10%	50V
C811	1-162-289-31	CERAMIC	390PF	10%	50V
C812	1-137-372-11	FILM	0.022uF	5%	50V
C813	1-124-907-11	ELECT	10uF	20%	50V
C815	1-124-443-00	ELECT	100uF	20%	10V
C821	1-137-368-11	FILM	0.0047uF	5%	50V
C822	1-124-903-11	ELECT	1uF	20%	50V
C823	1-124-927-11	ELECT	4.7uF	20%	100V
C824	1-137-399-11	FILM	0.1uF	5%	50V
C825	1-124-907-11	ELECT	10uF	20%	50V
C826	1-124-903-11	ELECT	1uF	20%	50V
C827	1-124-902-00	ELECT	0.47uF	20%	50V
C828	1-124-927-11	ELECT	4.7uF	20%	100V
C829	1-162-291-31	CERAMIC	560PF	10%	50V
C830	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C831	1-164-056-11	CERAMIC	27PF	5%	50V
C832	1-101-890-00	CERAMIC	75PF	5%	50V
C833	1-162-288-31	CERAMIC	330PF	10%	50V
C834	1-164-066-11	CERAMIC	68PF	5%	50V
C903	1-124-443-00	ELECT	100uF	20%	10V
C904	1-124-443-00	ELECT	100uF	20%	10V
C905	1-124-443-00	ELECT	100uF	20%	10V
C906	1-124-443-00	ELECT	100uF	20%	10V
C907	1-124-443-00	ELECT	100uF	20%	10V
C908	1-124-443-00	ELECT	100uF	20%	10V
C909	1-124-907-11	ELECT	10uF	20%	50V
C910	1-124-907-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description			Remark
C913	1-124-927-11	ELECT	4.7uF	20%	100V
C915	1-126-933-11	ELECT	100uF	20%	16V
C920	1-161-379-00	CERAMIC	0.01uF	20%	25V
C921	1-124-925-11	ELECT	2.2uF	20%	100V
C922	1-137-460-91	FILM	0.0082uF	5%	100V
C923	1-124-925-11	ELECT	2.2uF	20%	100V
C924	1-137-438-11	FILM	0.0082uF	5%	50V
C925	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C926	1-137-436-11	FILM	0.0039uF	5%	50V
C927	1-137-436-11	FILM	0.0039uF	5%	50V
C928	1-137-399-11	FILM	0.1uF	5%	50V
C929	1-124-120-11	ELECT	220uF	20%	25V
C931	1-124-120-11	ELECT	220uF	20%	25V
C942	1-124-927-11	ELECT	4.7uF	20%	100V
C943	1-124-903-11	ELECT	1uF	20%	50V
C944	1-124-907-11	ELECT	10uF	20%	50V
C945	1-161-379-00	CERAMIC	0.01uF	20%	25V
C946	1-124-925-11	ELECT	2.2uF	20%	100V

< CONNECTOR >

*	CN901	1-564-507-11	PLUG, CONNECTOR 4P
*	CN902	1-564-508-11	PLUG, CONNECTOR 5P
	CN903	1-564-506-11	PLUG, CONNECTOR 3P
*	CN904	1-564-509-11	PLUG, CONNECTOR 6P
	CN905	1-564-505-11	PLUG, CONNECTOR 2P
*	CN906	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
*	CN911	1-560-061-00	PIN, CONNECTOR 3P
*	CN912	1-560-060-00	PIN, CONNECTOR 2P (A195, G2000)

< DIODE >

D901	8-719-987-63	DIODE	1N4148M
D902	8-719-987-63	DIODE	1N4148M
D903	8-719-987-63	DIODE	1N4148M
D904	8-719-987-63	DIODE	1N4148M
D905	8-719-987-63	DIODE	1N4148M
D906	8-719-987-63	DIODE	1N4148M
D907	8-719-987-63	DIODE	1N4148M
D908	8-719-987-63	DIODE	1N4148M
D909	8-719-987-63	DIODE	1N4148M

< IC >

IC903	8-759-098-73	IC	HA12172NT
IC904	8-759-111-44	IC	uPC4570C-1
IC905	8-759-111-44	IC	uPC4570C-1
IC906	8-759-143-54	IC	uPC1330HA
IC907	8-759-240-81	IC	TC4081BP

MAIN TC

Ref. No.	Part No.	Description		Remark
		< COIL >		
L701	1-410-780-11	INDUCTOR	27mH	
L801	1-410-780-11	INDUCTOR	27mH	
L901	1-414-223-11	INDUCTOR	470uH	
		< TRANSISTOR >		
Q701	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q801	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q901	8-729-194-57	TRANSISTOR	2SC945-P	
Q902	8-729-194-57	TRANSISTOR	2SC945-P	
Q903	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q904	8-729-119-78	TRANSISTOR	2SC2785-HFE	
Q905	8-729-119-76	TRANSISTOR	2SA1175-HFE	(A195, G2000)
Q906	8-729-900-89	TRANSISTOR	DTC144ES	(A195, G2000)
Q907	8-729-900-89	TRANSISTOR	DTC144ES	
Q908	8-729-900-89	TRANSISTOR	DTC144ES	
Q909	8-729-900-89	TRANSISTOR	DTC144ES	
Q910	8-729-900-65	TRANSISTOR	DTA144ES	
Q911	8-729-900-65	TRANSISTOR	DTA144ES	(A195, G2000)
Q912	8-729-900-89	TRANSISTOR	DTC144ES	(A195, G2000)
		< RESISTOR >		
R701	1-247-889-00	CARBON	270K 5%	1/4W
R702	1-249-404-00	CARBON	82 5%	1/4W
R703	1-247-882-11	CARBON	130K 5%	1/4W
R704	1-247-850-11	CARBON	6.2K 5%	1/4W
R711	1-247-889-00	CARBON	270K 5%	1/4W
R712	1-249-404-00	CARBON	82 5%	1/4W
R713	1-247-882-11	CARBON	130K 5%	1/4W
R714	1-247-850-11	CARBON	6.2K 5%	1/4W
R715	1-249-433-11	CARBON	22K 5%	1/4W
R720	1-249-425-11	CARBON	4.7K 5%	1/4W
R721	1-249-429-11	CARBON	10K 5%	1/4W
R722	1-249-431-11	CARBON	15K 5%	1/4W
R723	1-249-429-11	CARBON	10K 5%	1/4W
R724	1-249-421-11	CARBON	2.2K 5%	1/4W
R725	1-249-428-11	CARBON	8.2K 5%	1/4W
R726	1-247-840-00	CARBON	2.4K 5%	1/4W
R727	1-249-433-11	CARBON	22K 5%	1/4W
R728	1-249-417-11	CARBON	1K 5%	1/4W
R731	1-249-430-11	CARBON	12K 5%	1/4W
R801	1-247-889-00	CARBON	270K 5%	1/4W
R802	1-249-404-00	CARBON	82 5%	1/4W
R803	1-247-882-11	CARBON	130K 5%	1/4W
R804	1-247-850-11	CARBON	6.2K 5%	1/4W
R811	1-247-889-00	CARBON	270K 5%	1/4W
R812	1-249-404-00	CARBON	82 5%	1/4W
R813	1-247-882-11	CARBON	130K 5%	1/4W

Ref. No.	Part No.	Description		Remark
R814	1-247-850-11	CARBON	6.2K 5%	1/4W
R815	1-249-433-11	CARBON	22K 5%	1/4W
R820	1-249-425-11	CARBON	4.7K 5%	1/4W
R821	1-249-429-11	CARBON	10K 5%	1/4W
R822	1-249-431-11	CARBON	15K 5%	1/4W
R823	1-249-429-11	CARBON	10K 5%	1/4W
R824	1-249-421-11	CARBON	2.2K 5%	1/4W
R825	1-249-428-11	CARBON	8.2K 5%	1/4W
R826	1-247-840-00	CARBON	2.4K 5%	1/4W
R827	1-249-433-11	CARBON	22K 5%	1/4W
R828	1-249-417-11	CARBON	1K 5%	1/4W
R831	1-249-430-11	CARBON	12K 5%	1/4W
R902	1-249-389-11	CARBON	4.7 5%	1/4W
R903	1-249-413-11	CARBON	470 5%	1/4W
R904	1-249-413-11	CARBON	470 5%	1/4W
R905	1-249-413-11	CARBON	470 5%	1/4W
R906	1-249-413-11	CARBON	470 5%	1/4W
R911	1-215-451-00	METAL	18K 1%	1/6W
R912	1-249-440-11	CARBON	82K 5%	1/4W
R913	1-247-862-11	CARBON	20K 5%	1/4W
R914	1-249-437-11	CARBON (A195, G2000)	47K 5%	1/4W
R915	1-249-437-11	CARBON	47K 5%	1/4W
R916	1-249-437-11	CARBON	47K 5%	1/4W
R917	1-247-864-11	CARBON	24K 5%	1/4W
R918	1-249-437-11	CARBON	47K 5%	1/4W
R919	1-249-433-11	CARBON	22K 5%	1/4W
R920	1-249-429-11	CARBON	10K 5%	1/4W
R921	1-249-424-11	CARBON	3.9K 5%	1/4W
R922	1-249-389-11	CARBON	4.7 5%	1/4W
R923	1-249-434-11	CARBON	27K 5%	1/4W
R924	1-249-434-11	CARBON	27K 5%	1/4W
R925	1-249-429-11	CARBON	10K 5%	1/4W
R926	1-249-389-11	CARBON	4.7 5%	1/4W
⚠R931	1-215-905-11	METAL OXIDE	10 5%	3W F
R932	1-249-426-11	CARBON (A195, G2000)	5.6K 5%	1/4W
R932	1-249-427-11	CARBON	6.8K 5%	1/4W (D250)
R933	1-249-418-11	CARBON	1.2K 5%	1/4W (D250)
R933	1-249-442-11	CARBON (A195, G2000)	510 5%	1/4W
R934	1-249-441-11	CARBON (A195, G2000)	100K 5%	1/4W
R935	1-249-441-11	CARBON (A195, G2000)	100K 5%	1/4W
R936	1-249-429-11	CARBON (A195, G2000)	10K 5%	1/4W
R941	1-249-436-11	CARBON	39K 5%	1/4W
R942	1-249-433-11	CARBON	22K 5%	1/4W
R943	1-249-436-11	CARBON	39K 5%	1/4W

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```
IC1201 8-759-156-00 IC   TA8221AH

                    < RESISTOR >

R1201  1-249-417-11 CARBON          1K     5%    1/4W
R1203  1-249-413-11 CARBON          470    5%    1/4W
R1218  1-249-385-11 CARBON          2.2    5%    1/6W
R1219  1-249-385-11 CARBON          2.2    5%    1/6W
R1251  1-249-417-11 CARBON          1K     5%    1/4W

R1253  1-249-413-11 CARBON          470    5%    1/4W
R1268  1-249-385-11 CARBON          2.2    5%    1/6W
R1269  1-249-385-11 CARBON          2.2    5%    1/6W
*************************************************************

*       1-650-511-11 SW BOARD
                     ********

                    < CONNECTOR >

* CN951  1-568-942-11 PIN, CONNECTOR 4P

                    < SWITCH >

  S951   1-692-785-11 SWITCH, PUSH (3 KEY)
                      (DOLBY NR/TAPE SELECT/DUBBING SPEED)
                      (A195, G2000)
  S951   1-692-787-11 SWITCH, PUSH (2 KEY)
                      (DOLBY NR/TAPE SELECT) (D250)
*************************************************************

*       1-638-729-11 TABLE MOTOR BOARD
                     ****************

                    < CAPACITOR >

  C704   1-161-375-00 CERAMIC        0.0022uF    20%    50V

                    < CONNECTOR >

* CN707  1-573-044-11 SOCKET, CONNECTOR 5P

                    < PHOTO SENSOR >

  D701   8-719-970-19 PHOTO SENSOR   GP-1A521

                    < RESISTOR >

  R701   1-249-416-11 CARBON          820    5%    1/4W
*************************************************************
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```
  58     1-690-708-11 CORD (WITH CONNECTOR)

* 107    1-452-538-11 MAGNET
  158    1-765-195-11 WIRE (FLAT TYPE) (7 CORE)
  167    1-537-645-11 JUMPER, FILM (WITH TERMINAL)
  169    1-590-849-11 WIRE, FLAT TYPE (5 CORE)
⚠201     8-848-144-11 DEVICE, OPTICAL KSS-240A

  202    1-575-001-11 WIRE, FLAT TYPE (12 CORE)
⚠F1301   1-576-108-11 FUSE (4A/125V)
⚠F1302   1-576-108-11 FUSE (4A/125V)
  HE1    1-543-673-11 HEAD, MAGNETIC (ERASE) (DECK B)
  HP1    1-543-319-11 HEAD, MAGNETIC (PB) (DECK A)

  HRP1   1-543-319-11 HEAD, MAGNETIC (REC/PB) (DECK B)
  M101   X-4917-504-1 MOTOR ASSY (SLED)
  M102   X-4917-523-4 BASE (OUTSERT) ASSY (SPINDLE MOTOR)
  M701   A-4604-849-A MOTOR ASSY, ROTARY
  M702   A-4604-847-A MOTOR ASSY, LOADING

  M901   X-3362-377-1 MOTOR (WH) ASSY
  S701   1-572-713-11 SWITCH, PUSH (WITH CONNECTOR)
⚠S1301   1-572-267-61 SWITCH, PUSH (AC POWER) (1 KEY) (POWER)

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HARDWARE LIST

```
  #1     7-621-255-15 SCREW +P 2X3
  #2     7-621-775-20 SCREW +B 2.6X5
  #3     7-623-921-01 RING, RETAINING, CAPSTAN
  #4     7-682-554-04 SCREW +B 3X25
  #5     7-685-650-79 SCREW +BVTP 3X16 TYPE2 N-S

  #6     7-685-103-19 SCREW +P 2X5 TYPE2 NON-SLIT
  #7     7-685-133-19 SCREW +P 2.6X6 TYPE2
  #8     7-682-961-01 SCREW +PSW 4X8
  #9     7-685-135-19 SCREW +BTP 2.6X10 TYPE2 N-S
  #10    7-685-136-19 SCREW +P 2.6X12 TYPE2 NON-SLIT

  #11    7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
  #12    7-685-647-79 SCREW +BVTP 3X10 TYPE2 N-S
  #13    7-688-001-01 W 2, SMALL
  #14    7-621-849-00 SCREW, TAPPING
  #15    7-682-547-09 SCREW +BVTT 3X6 (S)

  #16    7-682-548-04 SCREW +BVTT 3X8 (S)
  #17    7-685-880-01 SCREW +BVTT 4X6
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```

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Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-467-430-11	COMMANDER, STANDARD (RM-S221)	
	2-181-754-21	COVER (MLY), BATTERY (For RM-S221)	
*	3-376-136-01	CUSHION (HALF)	
*	4-963-173-01	CUSHION	

9-959-305-11

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